Abstracts of



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دانشگاه ارومیه

Abstracts of the 41st Annual Iranian Mathematics Conference

12-15 September 2010, University of Urmia,

Urmia, Iran

Department of Mathematics
Urmia University, Urmia-Iran

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V. D. Breaz	Romania
A. Dujella	Croatia
A. Ebadian	Iran
T. Ghasemi Honary	Iran
K. Ivaz	Iran
M. Kuzucuoglu	Turkey
S. E. Mahmoodian	Iran
A. Mohammadpour	Iran
H. Mohebi	Iran
A. Razavi	Iran
A. Salemkar	Iran
M. M. Shikare	India

Preface

The 41st Annual Iranian Mathematics Conference is to be held in Urmia University at one of the most beautiful cities in Iran. On behalf of the organizing committee as well as the scientific committee, it is my pleasure to welcome all participants, especially the speakers. I would also thanks the invited speakers from home and abroad.

We have received about 1200 articles in English and Farsi of which 600 were accepted in the various fields of pure and applied mathematics. Typos and grammatical errors are due to authors. We have tried to provide the best for you from the least provided us. Anyway, I apologize in advance for any possible inconveniences will come and wish you a good time during the conference. Support from the following gratefully acknowledged: Ministry of Science, Technology and Research; Iranian Mathematical Society; organizing committee and scientific committee; Department of Mathematics of Tabriz University, especially Dr. Parviz Darania.

H. Behravesh
Secretary of the Scientific Committee

Invited Speakers

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From Invariant Theory To Almost Zero Modules Title Second Line

Mohsen Asgharzadeh

Institute For Research In Fundamental Sciences (IPM)
Tehran, Iran.

Abstract

The aim of this expository talk is to introduce some of the homological conjectures to the participants. We start with the Hochster-Roberts theorem by which a ring of invariants of a linearly reductive group is Cohen-Macaulay. Then we recall the notion of tight closure as an auxiliary tool in the proof of Hochster-Roberts theorem. Our next aim is to define almost zero modules as a generalization of tight closure theory which was introduced and studied by Faltings.

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An Invitation To Hilbert C^*-modules

Damir Bakic

University of Zagreb,
Zagreb, Croatia

Abstract

A Hilbert C^*-module is a (right) module over a C^*-algebra A equipped with an A-valued inner product that is complete in the corresponding norm. The concept is introduced by I. Kaplansky in 1953. Since the definition naturally generalizes that of a Hilbert space, one might expect that many of the results from Hilbert space theory extend to this broader context. Although some generalizations of that kind are obtained, it turns out that many of some standard, even basic facts from Hilbert spaces do not hold for Hilbert C^*-modules. On the other hand, a consequence of allowing the inner product to take values in a C^*-algebra instead in the field of complex numbers is that some concepts and results for C^*-algebras generalize naturally to Hilbert C^*-modules. The talk will be devoted to selected topics from general theory of Hilbert C^*-modules. We shall emphasize some similarities as well as some drawbacks of the theory in comparison to the theory of Hilbert spaces and C^*-algebras, respectively. Some old and some new results will be presented. In particular, we shall touch upon the following subjects:

Kasparov's stabilization theorem,

Representations of Hilbert C^*-modules,

Extensions of Hilbert C^*-modules,

Hilbert C^*-modules over C^*-algebras of compact operators,

Frames in Hilbert C^*-modules.

In the final part of the talk we shall discuss some recent results from a joint work with Ljiljana Arambasic and Mohammad Sal Moslehian.

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Elliptic Curves

Andrej Dujella

University of Zagreb,
Zagreb, Croatia.

Abstract

Elliptic curves are important objects in many areas, such as number theory, algebraic geometry, complex analysis and public key cryptography. In this talk, we will give an introduction to elliptic curves over the rationals and describe basic algorithms for obtaining information on Mordell-Weil group. We will briefly mention cryptographic applications of elliptic curves over finite fields.

Mathematics Subject Classification: Primary 11G05; Secondary 14H52.

Keywords: Elliptic curves, rank, torsion group.

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High Rank Elliptic Curves Induced By Diophantine Triples And Congruent Numbers

Andrej Dujella

University of Zagreb,
Zagreb, Croatia.

Abstract

We describe methods used in construction of elliptic curves with relatively high rank in several interesting families of elliptic curves (e.g. curves with prescribed torsion group, congruent number curves, θ-congruent curves and curves induced by Diophantine triples and quadruples).

Mathematics Subject Classification: Primary 11G05; Secondary 14H52.

Keywords: Elliptic curves, Diophantine m-tuples, Congruent numbers, θ-congruent

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On Certain Special Families Of Univalent Analytic Functions

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Faculty of Science,
Urmia University,
Urmia,Iran

Abstract

We denote by $\mathcal{A}$ the class of all analytic functions f in the unit disc $\Delta = \{z \in \mathbf{C} : |z| < 1\}$ with the normalization $f(0) = f'(0) - 1 = 0$. For a positive number $\lambda > 0$, we denote by $U_3(\lambda)$ the class of all $f(z) = z + \sum_{n=2}^{\infty} a_n z^n \in \mathcal{A}$ such that $a_3 - a_2^2 = 0$ and satisfies the condition

$$\left| \left(\frac{z}{f(z)} \right)^2 f'(z) - 1 \right| < \lambda, \quad z \in \Delta.$$

A function $f \in \mathcal{A}$ is said to be in $\mathcal{SR}(\gamma)$ if $|arg f'(z)| < \frac{\pi\gamma}{2}$. In this paper, we find conditions on λ, α and γ such that $U_3(\lambda)$ is included in $\mathcal{S}^*(\alpha)$ or $\mathcal{SS}(\gamma)$ or $\mathcal{SR}(\gamma)$. Here $\mathcal{S}^*(\alpha)$ and $\mathcal{SS}(\gamma)$ denote the class of all starlike functions of order α, and the class of all strongly starlike of order γ, respectively.

Mathematics Subject Classification: Primary 30C45; Secondary 30C80.

Keywords: Coefficient inequality, analytic, univalent, close-to-starlike and starlike functions.

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Module Homomorphisms On Fréchet Algebras Title Second Line

T. Ghasemi Honary
H. Shayanpour

Tarbiat Moallem University,
No. 50 Taleghani Avenue, Tehran, I.R.Iran

Abstract

Let A be a unital Fréchet algebra. We first present some results on the automatic continuity of A-module homomorphisms $\theta : X \to Y$, where X, Y are Fréchet A-modules. Then we show that if there exists a continued bisection of the identity for A, then θ is automatically continuous, under certain condition on X. In particular, every homomorphism $\theta : A \to B$ is continuous for certain Fréchet algebras B (or any Banach algebra B). Finally, we show that every unital Fréchet algebra, with a continued bisection of the identity, is functionally continuous.

Mathematics Subject Classification: Primary 46H40, Secondary 46H05.

Keywords: Automatic continuity, Continued bisection of the identity, Fréchet algebras, Module homomorphism, Homomorphism, Semisimple.

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On The Automatic Continuity Of n-Homomorphisms And Homomorphisms

T. Ghasemi Honary

Tarbiat Moallem University,
Tehran, I.R. Iran.

Abstract

Let A, B be Banach algebras and $\theta : A \to B$ be a homomorphism. A theorem due to C.E. Rickart asserts that when B is strongly semisimple and θ is dense range, then θ is automatically continuous. Another well known theorem, due to B.E. Johnson, asserts that if B is semisimple and θ is surjective, then θ is automatically continuous.

An n-homomorphism between two algebras A and B is a linear map $\theta : A \to B$ such that $\theta(a_1 a_2 \cdots a_n) = \theta(a_1)\theta(a_2)\cdots\theta(a_n)$ for all elements $a_1, a_2, ..., a_n \in A$. This notion is an extension of a homomorphism.

In this talk we obtain some results on the automatic continuity of n-homomorphisms between certain topological algebras as well as Banach algebras. In particular, we extend the results of Rickart and Johnson for n-homomorphisms, under certain conditions.

Mathematics Subject Classification: Primary 46H40, 46H05;

Secondary 47B48, 46L05, 46J05.

Keywords: Automatic continuity, Semisimple and strongly semisimple, Homomorphism and n-homomorphism, Dense range, Q-algebra, Fréchet algebra, lmc algebra, Factorizable algebra.

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Universal Groups And Regular Limit Groups

M. Kuzucuoglu

Middle East Technical University,
Ankara, TURKEY.

Abstract

We will give basic properties of countable locally finite universal groups constructed by P. Hall and the regular limit groups constructed by O. H. Kegel. We discuss the centralizers of bounded subgroups in regular limit groups.

Mathematics Subject Classification: Primary 20F50, ; Secondary 20D06.

Keywords: Locally finite Groups, Universal groups, regular limit groups.

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Defining Sets Everywhere: Problems And Motivations

Ebadollah S. Mahmoodian

Sharif University of Technology,
Tehran, I.R. Iran.

Abstract

We present as examples, some problems which motivate undergraduates, or even high school students, to do research in mathematics. These problems are related to the speaker's research activity. They have been presented in the past to recruit very bright students. In this talk we will go through the roots of some these problems and elaborate the research topics behind them.

Keywords: Inequality

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Parametric Independent Component Analysis Of Stable Random Vectors

Mohammadreza Ameri, Adel Mohammadpour, Vahid Nassiri and Mona Shokripour

Amirkabir University of Technology,
Tehran, Iran.

Abstract

Consider the model $\mathbf{X} = A\mathbf{S}$, suppose that $\mathbf{X}$ is observed and we are interested in learning the mixing matrix A such that the components of $\mathbf{S}$ become as independent as possible, this problem is known as independent component analysis (ICA). Many famous and efficient algorithms have been developed in order to solve this problem. As we know making the observed vector uncorrelated is an old problem in statistics and some solutions like principal component analysis (PCA) are used for it. These methods use the covariance matrix in order to decorrelate the observed vector. As we know, independence is a stronger property than uncorrelatedness, therefore, it is usual to use higher order statistics in order to achieve independence in the case of ICA. These methods work pretty well but until we have finite higher order moments.

Mathematics Subject Classification: Primary 60E07.

Keywords: Independent component analysis, α-stable class of distributions, sub-Gaussian class of distributions, discrete spectral measure

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Criteria For Maximal Abstract Monotonicity With Applications In Optimization

Hossein Mohebi

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Kerman, Iran

Abstract

In this paper, we develop a theory of monotone operators in the framework of abstract convexity. Indeed, by using an additivity constraint qualification, we prove a generalization of Fenchel's duality theorem in the framework of abstract convexity, and give criteria for maximal abstract monotonicity. Finally, we present necessary and sufficient conditions for maximality of abstract monotone operators.

Mathematics Subject Classification: Primary 47H05, 47H04, 52A01, 26A51; Secondary 26B25.

Keywords: Constraint qualification, Generalized Fenchel's duality, Monotone operator, Abstract monotonicity, Abstract convex function, Abstract convexity.

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Generalizations Of Symmetric Spaces

Asadollah Razavi

Amirkabir University of Technology,
Tehran, Iran.

Abstract

Symmetric spaces are Riemannian manifolds together with a special structure, they were first defined and studied by E. Cartan [Ca1], and have been generalized to to s-manifolds by A.J. Ledger [Le1] and to reflection spaces by O.Loos [Lo1].Later they have been generalized to Sigma spaces by A. J. Ledger ,O. Loos and the author ([Lo2],[LR3]) . Also they have been generalized to projectively symmetric spaces by F. Podesta [Po1] and to weakly symmetric spaces by A. Selberg [Se1].All these generalization are for Riemannian case. Symmetric Finsler spaces have been defined and studied by S. Deng and Z. Hou [DH1] and D. Latifi and the author [LR1] and recently generalized to Finsler s-manifolds [HR1] and weakly symmetric Finsler spaces [HR2] by P. Habibi and the author.

Mathematics Subject Classification:53C60, 53C35.

Keywords: Finsler homogeneous space, Symmetric space,s-manifold, Symmetric Finsler space,Weakly Symmetric space,Weakly Symmetric Finsler space,Symmetric Finsler s-manifold, Σ-space.

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The Index Complex Of Maximal Subalgebras In Finite Dimensional Lie Algebras

Ali Reza Salemkar

Shahid Beheshti University, G.C.,
Tehran, Iran

Abstract

Let M be a maximal subalgebra of a finite dimensional Lie algebra L. A subalgebra C of L is said to be a completion of M in L if C is not contained in M but every proper subalgebra of C which is an ideal of L, is contained in M. The set $I(M)$ of all completions of M is called the index complex of M in L. This is analogous to the concept of the index complex of a maximal subgroup of a finite group, which has been studied by a number of authors. We use this concept to study the influence of the maximal subalgebras on the structure of a finite dimensional Lie algebra. In particular, we give some characterizations of solvable and supersolvable Lie algebras.

Mathematics Subject Classification: 17B05, 17B20, 17B30, 17B50.

Keywords: Lie algebras, index complex, solvable, supersovable.

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Various Splitting Operations For Graphs, Binary Matroids And Their Applications

Maruti Mukinda Shikare

University of Pune,
Maharashtra (India)

Abstract

Four types of splitting operations in Graph Theory have been studied on large scale y graph theorists. They include the splitting operation due to H. Fleischner [Eulerian Graphs and Related Topics, Part 1, Vol. 1, North Holland, Amesterdam (1990)], the -point splitting, and the n-line splitting due to P. J. Slater [A classification of 4- onnected graphs, J. Combinatorial Theory, 17 (1974), 281-298] and the splitting of operations due to L. Lovasz [Combinatorial Problems and Exercises, North Holland, Amesterdam (1979)]. These operations have important applications in graph theory. We take review of these operations in graphs. These operations and a few related results have been extended from graphs to inary matroids [Raghunathan et. al., Splitting in a binary matroid, Discrete Math- matics, 184 (1997), 261-271]. Several results involving these operations in matroids ave been investigated. We discuss these results and also consider some of the appli- ations of these operations to matroid theory.

Speakers

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Linearly ordered $P^{\pm}$-spaces

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Ahvaz, Iran.

Abstract

In a linearly ordered topological space (LOTS), P^+-points, P^--points and naturally P^+-space and P^--space are defined and an example of a P^+-space without P^--points, which is also an example of a LOTS almost P-space without P-points is given. Using these concepts, we show that in the category of linearly ordered topological spaces, quasi F-spaces and almost P-spaces coincide. We also show that a LOTS is sequentially disconnected if and only if it is either disconnected or it has at least one almost P-point.

Keywords: Almost P-point, quasi F-space, $P^+(P^-)$-space, sequential space, sequentially connected space, tightness.

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Some results on prime submodules of modules

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Solution of full interval linear equation $A_{2n\times n}X_{n\times 1} = b_{2n\times 1}$ based on Kaucher arithmetic

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M. Adabitabar Firozja

Abstract

In this paper, first, we proposed Kaucher arithmetic for interval number and then solving the system $A_{2n\times n}X_{n\times 1} = b_{2n\times 1}$ where $a_{ij} = [\underline{a_{i,j}}, \overline{a_{i,j}}]$ such that $\underline{a_{i,j}} * \overline{a_{i,j}} > 0$ and $x_j = [\underline{x_j}, \overline{x_j}]$ and $b_i = [\underline{b_i}, \overline{b_i}]$.

Keywords: interval number, Kaucher arithmetic, linear system.

[1]speaker

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ON MATRIX VARIATE t-DISTRIBUTION

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S. Armanfar

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Abstract

In this paper we consider the matrix variate t-distribution as generalization of multivariate t-distribution. A representation of this family is shown. Subsequently some important statistical properties are given.

Mathematics Subject Classification: 62H99
Keywords: Matrix variate normal distribution, matrix variate t-distribution, Wishart Distribution

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Some extensions of Birkhoff polytope

A. Armandnejad

Department of Mathematics Vali-e-Asr
University of Rafsanjan P.O. Box 7713936417, Rafsanjan, Iran.

Abstract

Let $\mathbf{M}_n$ be the algebra of all $n \times n$ real matrices. A matrix $D \in \mathbf{M}_n$ with nonnegative entries is called doubly stochastic if $De = D^t e = e$, where $e = (1, \ldots, 1)^t \in \mathbb{R}^n$. The Birkhoff polytope Ω_n is the set of all $n \times n$ doubly stochastic matrices. In this paper we study some subpolytopes of Birkhoff polytope. Also we introduce some extensions of Birkhoff polytope and we investigate their properties.

Mathematics Subject Classification: Primary 15A04, 15A21, Secondary 15A51.

Keywords: Doubly stochastic matrix, Majorization; g-majorization, Polytope.

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Some Necessary Conditions on the Support Sizes in t-Designs

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P. O. Box 45195-313, Zanjan, Iran.

Abstract

We present some necessary conditions on the structure of support in t-designs. Some of these conditions are about the number and the range of occurrences of i-sets ($1 \leq i \leq t$), some others are about the rage and the bounds for the support sizes.

Mathematics Subject Classification: 05B05, 05B07.
Keywords: t-Design, Support Size.

[1]speaker

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The properties of $(1,2)$-pseudo Singer generator elements in general linear groups

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Abstract

In this paper we introduce $(1,2)$-pseudo Singer generator elements in finite three dimensional general linear groups and give some of its properties .

Mathematics Subject Classification: 20D60.
Keywords: General linear group, non-commuting subset of finite groups.

[1]speaker

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Pathological Properties of Operators with Weakly Dens Orbits

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S. Aghashiri[1]

Department of Mathematics, Shiraz Azad University,
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Abstract

In this paper we will study the lineability and spaceability of weakly hypercyclic and weakly supercyclic operators on a separable Banach Space X.

Mathematics Subject Classification: Primary 47A16, Secondary 47L10.

Keywords: Pathological Properties, Weakly Dense Orbits, Weakly Hypercyclic, Weakly Supercyclic.

[1]speaker

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SPECIAL WEYL PROJECTIVE CURVATURE ON FINSLER MANIFOLDS

SAMANEH AMOZEGAR[1]

BEHZAD NAJAFI

[1]speaker

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Characterization of Different Types of Foliations on the Tangent Bundle of a Finsler Manifold

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F. Ahangari[1]

Department of Mathematics, Iran University of Science and Technology

Abstract

As the geometric structures that exist in Finsler geometry depend on both point and direction, the tangent bundle of a Finsler manifold is of special importance. In this paper, we have studied the different foliations on the tangent bundle of a Finsler manifold. We have mentioned some results about the vertical foliation. We have also shown that in some particular cases, the horizontal distribution is involuting. As a main result, we have showed that the integrability of the horizontal distribution, leads to a new type of foliation on the tangent bundle. This foliation is created by the set of vector fields which are symmetries of the vertical projector. We have proved that it can be regarded as a Riemannian foliation on the tangent bundle.

Mathematics Subject Classification: 53C12, 53C15, 53C22.
Keywords: Finsler manifold, foliation, vertical projector, holonomy, symmetry, bundle-like metric.

[1]speaker

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Some Results on Linear Preserving Maps

S. EBRAHIMI[1]

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Abstract

Let H be an infinite dimensional separable Hilbert space and $B(H)$ the algebra of bounded operators on H. In this paper we show if $\phi : B(H) \to B(H)$ preserves ascent and discent of operators and preserves the essential spectrum also $\phi(T^n) = \phi(T)^n$,$\forall T \in B(H)$ and $\forall n \in N$ then ϕ preserves the set of Browder operators if and only if it preserves the set of polar operators if and only if it preserves the set of Fredholm and consequently the set of Weyl operators.

Keywords: Fredholm, Weyl, Browder, polar, essential spectrum

[1]speaker

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The First Survey for abilities of DEA in Solving SILP Problems

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M.Zorroshd

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Abstract

We consider a model for data envelopment analysis with infinitely many decision- making units. The determination of the relative efficiency of a given decision-making unit amounts to the solution of a semi-infinite optimization problem. We show that a decision-making unit of maximal relative efficiency exists and that it is 100Moreover, this decision-making unit can be found by calculating a zero of the semi- infinite constraint function. For the latter task we propose a bi-level algorithm. We apply this algorithm to a problem from chemical engineering and present numerical results.

Keywords: Flat module, C(X), zero-set, Tensor Product,Torsion free.

[1]speaker

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An Introduction to System Signatures

F. Ebrahimi

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Abstract

The signature of a system with independent and identically distributed $i.i.d.$) component lifetimes is a vector whose ith element is the probability that ith component failure is fatal to the system. System signatures have been found to be quite useful tools in the study and comparison of engineered systems.

Keywords: Coherent system, Signature, Order statistics, Reliability, k-out-of-n system.

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A Study on the Free Oscillation of Pendulum Using Variational Approach Method and Comparison with Exact solution

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H. Ebrahimi Khah[1]

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M. Daie

Department of Civil Engineering, Shomal University, P.O. Box 731, Amol, Iran.

Abstract

In this article, He's Variational Approach Method is applied to free oscillation of pendulum. We illustrate that the variational approach method does not require linearization or small perturbation. Comparison of the results which is obtained by this method with the obtained results by the exact solution reveals that the He's variational approach is very effective and convenient and can be easily extended to other nonlinear systems and can therefore be found widely applicable in mathematics, engineering and other sciences.

Mathematics Subject Classification: 00B05, 34A34, 34K13.
Keywords: Inequality, Oscillation of Pendulum, Nonlinear differential equation, Variational Approach Method, Approximate Analytical Solution, Exact Solution.

[1]speaker

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CHARACTER INNER AMENABILITY OF $A\hat{\otimes}B$

H.R. Ebrahimi Vishki [1]

A.R. Khoddami

Abstract

We investigate the notion of character inner amenability for the projective tensor product of Banach algebras.

[1] speaker

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Best Approximation for Convex Cones in 2-Inner Product Spaces

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Department of Mathematics, Islamic Azad University,
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T. Sistani

Department of Mathematics, Islamic Azad University,
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Abstract

In this article, we get some theorems to finding the best approximation elements in 2-inner product spaces.

Mathematics Subject Classification: Primary 41A65, Secondary, 41A15.

Keywords: 2-inner product spaces, 2-normed spaces, b-best approximation, b-proximinal, b-Chebyshev, b-dual cone.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Application of degenerate kernel method for a class of singular nonlinear integral equations

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Abstract

A degenerate kernel method is applied to nonlinear integral equations on real line by approximating the kernel of integral equation by wavelets and pre-wavelets. Convergence rate of the approximate solution is proved in terms of the kernel decay rate and number of dilations and shifts used in approximation of the kernel.

Mathematics Subject Classification: 45G05, 65T60

Keywords: Nonlinear Singular Integral Equations, Wavelets.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Maximal Ideal Space of Extended Rational Functions Algebras

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Abstract

Let K and X be compact subset of $\mathbb{C}$ such that $K \subseteq X$. Set $R(X,K) = \{f \in C(X) : f|_K \in R(K)\}$ where $R(K)$ is the uniform closure of $R_0(K)$, the algebra of all rational functions with poles off K. In this paper, we obtain the maximal ideal space of $R(X,K)$.

Mathematics Subject Classification: 46J10, 46J15.
Keywords: Banach function algebra, Differentiable Lipschitz algebras, Extended Lipschitz algebra, Maximal ideal space, Rational functions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Proper actions on anti de Sitter space $H^{1,2}$

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Abstract

In this paper we study the anti de Sitter space $H^{1,2}$ under the action of a closed Lie subgroup G of the isometry group $Iso(H^{1,2})$. When the action is proper with an orbit of codimension one, we determine the acting group up to conjugacy, the orbits up to isometry and the orbit space up to homeomorphism, and we find some equivalent conditions on the orbits and the acting group.

Mathematics Subject Classification: 53C30, 57S25.

Keywords: Proper action, anti de Sitter space.

[1]speaker

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population models with diffusion , strong Allee effect and constant yield harvesting

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Abstract

The main purpose of this paper is the study of positive solutions distribution of reaction diffusion equations with strong Allee effect type growth and constant yield harvesting (semipositone) via the method of sub super solution .

Mathematics Subject Classification: 54E70, 54H25.

Keywords: semipositione, Allee effect, Harvesting.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Fibonacci Length Of an Efficiently Persented Metabelian p-Group

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Iran.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Homotopy Analysis Method for Computing Eigenvalues of Schrodinger Equation

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Abstract

In this paper, we apply Homotopy Analysis Method (HAM) for computing the eigenvalues of Schrodinger problems.

Mathematics Subject Classification: Primary 65L15, Secondary 65L99, 34L10.

Keywords: Homotopy Analysis Method, Eigenvalues of Schrodinger Equation

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Varitational iteration method for solving mth-order boundary value problems

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Abstract

In this paper, the variational method is applied to solve mth-order boundary value problems. Only one iteration is needed, and the obtained solutions are of remarkable accuracy. By giving three examples and comparing with the exact solution, the efficiency of the method will be shown.

Keywords: variational iteration, boundary-value problems, approximate solution, nonlinear problems.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Quasi-multipliers on F-algebras

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Abstract

In this paper we consider the notion of quasi-multipliers on an F-algebra A, not necessarily normed or locally convex. We study their bilinearity and joint continuity under some suitable conditions. We also consider the strict and quasi-strict topologies on the algebra $QM(A)$ of all bilinear and jointly continuous quasi-multipliers of A having a minimal approximate identity and extend several known results to this general setting.

Mathematics Subject Classification: Primary 46H05, Secondary 46A16, 47D30, 47B47.

Keywords: Quasi-multiplier, multiplier, F-norm, F-algebra, minimal approximate identity, ultra-approximate identity, factorable algebra, strongly factorable topological algebra, completeness, uniform boundedness principle..

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Extension Of A Binary Matroid

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Abstract

In this paper, we extend the notion of a point-addition operation from graphs to binary matroids. This operation can be expressed in terms of element-addition operation and splitting operation. We consider a special case of this construction and study its properties. We call the resulting matroid of this special case a Γ-extension of the given matroid. We characterize circuits and independent sets of the resulting matroids.

Mathematics Subject Classification: 05B35.

Keywords: Binary matroid, Γ-Extension, Point-Addition.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

An application of minimal ideals of finite semigroup

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Abstract

In this paper we give an application of minimal ideal semigroup and its relationship with group kernel. In fact minimal ideal of semigroup is equal with group kernel. Of course if exist minimal ideal. As studied by L.-C. Kappe in 1999, the group

$$Gp(\pi) =< a, b, c \mid ab = bac, bc = cb, ac = ca, a^{2^\alpha} = 1, b^{2^\beta} = 1, c^{2^\gamma} = 1 >$$

where,
$\alpha \geq \beta \geq \gamma > 1$ is finite and its order is $2^{\alpha+\beta+\gamma}$. Now we let

$$Sg(\pi) =< a, b, c \mid ab = bac, bc = cb, ac = ca, a^{2^\alpha+1} = a, b^{2^\beta+1} = b, c^{2^\gamma+1} = c >$$

where, $\alpha \geq \beta \geq \gamma > 1$. We prove $Sg(\pi)$ is finite and:

$$|Sg(\pi)| = |Gp(\pi)| + 2^\alpha + 2^\beta + 2^\gamma + 2^{\alpha+\beta} + 2^{\beta+\gamma} + 2^{\alpha+\gamma}.$$

Mathematics Subject Classification: Primary 20M05, Secondary 20D15.

Keywords: Minimal Ideal.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Isometric copies of ℓ^1 and j-type mappings

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Abstract

In this talk we discuss the existence of a fixed point for several classes of mappings (mappings admitting a center, nonexpansive mappings, asymptotically nonexpansive mappings) defined on the closed convex subsets of a Banach space satisfying some proximinality conditions. Furthermore, we discuss the closed bounded convex subsets of ℓ^1 that fails the fixed point property for nonexpansive mappings.

Mathematics Subject Classification: 47H10, 47H09, 46B20.
Keywords: j-type mapping, admitting a center, fixed point.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

(q, q_1)-contraction of (ϵ, λ)-type

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Abstract

In this paper, we obtain two fixed point theorems for (q, q_1)-contraction of (ϵ, λ)-type and generalized C-contraction.

Mathematics Subject Classification: Primary 00X00; Secondary 00X00, 00X00.

Keywords: Probabilistic metric space, (q, q_1)-contraction of (ϵ, λ)-type, generalized C-contraction, fixed point.

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12-15 September 2010, University of Urmia, Urmia-Iran

Stability Analysis of an HIV/AIDS Epidemic Model with Treatment Presented by Fractional Differential Equation

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G. H. Erjaee

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Abstract

In this article, we investigate the behavior of the equilibrium points of an HIV/AIDS epidemic model with treatment presented by Fractional Differential Equation. Then we compare the numerical solutions of this system with those found for integer order counterpart for some values of the parameters exist in the system.

Mathematics Subject Classification: 37N25, 65P99.
Keywords: HIV/AIDS Epidemic Model- Fractional Differential Equation- Reproduction Number

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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ON THE CARDINALITY OF NON-ISOMORPHIC MATROIDS

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S. Ahsani

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Abstract

In this paper we have assessed the asymptotic number of non-isomorphic binary n-matroids and we have also determined that the cardinality of the set of non-isomorphic $(n+m)$-matroids is less or equal than the multiple of the cardinality of the set of non-isomorphic n-matroids and the cardinality of the set of non-isomorphic m-matroids

Mathematics Subject Classification: 05B35

Keywords: matroid, binary matroid, isomorphisms, equivalence, code, lattice, duality, minor, extention.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On new scalar product in the vector space

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f. mirzapour

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Abstract

In this paper we define a scalar product on the vector space. If H is pre-Hilbert space we study the relation of the old and new scalar product.We give a necessary and sufficient condition for which that the linear operator has a closed range.

Mathematics Subject Classification: 46C20, 47B07, 47A30.
Keywords: Hilbert space, closed operator, compact operator.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Spectral Frames

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Iran.

Abstract

In this paper we introduce the concept of spectral frames which is related to the concept of spectral measure and present some basic results and theorems about these frames. Also, we discuss about duals of spectral frames, perturbation of spectral frames and robustness of these frames to erasure of some elements.

Mathematics Subject Classification: 42C15, 41A58

Keywords: Lebesque integral, Hilbert space, Spectral measure, Borel set, frame Theory.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Some results on Suzuki generalized nonexpansive mappins

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Abstract

We consider a single valued and a multivalued mapping on a uniformly convex Banach space X. Under the assumptions that the mappings satisfy the Suzuki condition, we shall prove a common fixed point for them. In this way, we generalize some earlier results of Dhompongsa et al.

Mathematics Subject Classification: 47H10, 47H09.

Keywords: nonexpansive mapping, multivalued mapping, common fixed point.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A theorem on globally Symmetric Finsler spaces

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Abstract

We consider a single valued and a multivalued mapping on a uniformly convex Banach space X. Under the assumptions that the mappings satisfy the Suzuki condition, we shall prove a common fixed point for them. In this way, we generalize some earlier results of Dhompongsa et al.

Mathematics Subject Classification: 47H10; 47H09.

Keywords: Finsler Spaces, Locally and globally symmetric

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Investigation of a boundary layer for an equation with inhomogeneous boundary conditions

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Abstract

The investigation of the forming of the boundary layer is usually carried out by Euler scheme. The limit value is calculated for the obtained solution by tending small quantity to zero. If this value doesn't satisfy to the boundary conditions the boundary layer is formed in this point. Here, we consider a problem under non local boundary condition, that is suggested as an open problem in the paper [1].

Mathematics Subject Classification: 34E05,34E10,34e15

Keywords: Boundary layer,general non-local boundary condition, perturbed differential equation, Euler scheme.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Simultaneous Confidence Intervals for the Parameters of Extreme Value Distribution Based on Records

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M. Abdi

Abstract

In this paper, we consider the simultaneous confidence intervals for the parameters of extreme value distribution based on record statistics. A numerical example with a simulated data set is presented to illustrate the proposed method.

Mathematics Subject Classification: 62F25, 65E15.
Keywords: Upper record, Simultaneous confidence intervals, Extreme value distribution.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Finite Operator-valued tight Frames

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Abstract

In this paper we study the operator-valued frame potential on operator-valued frames for finite-dimensional Hilbert spaces. We show that if the operator-valued frame potential restrict to suitable sets of operator-valued frames, the local minimizers of this potential is a tight operator-valued frame.

Mathematics Subject Classification: 42C15, 47C15, 46C05, 46L05.
Keywords: operator-valued frame, Bessel operator-valued sequence, operator-valued frame potential.

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12-15 September 2010, University of Urmia, Urmia-Iran

The Dissipative Zakharov-Kuznetsov Equation

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Abstract

In this work we consider the generalized dissipative Zakharov-Kuznetsov equation. We will study the associated initial value problem in Sobolev spaces $H^s(\mathbb{R}^n)$ and some weighted spaces $\mathbf{F}_r^{s,p}$. We also prove an ill-posedness result in the anisotropic Sobolev spaces $H^{s,r}(\mathbb{R}^2)$ in two dimensional case.

Mathematics Subject Classification: 35Q35, 35K55, 35Q53.
Keywords: Nonlinear PDE, Initial Value Problem, Dissipation.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Linearly ordered $P^{\pm}$-spaces

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Abstract

In a linearly ordered topological space (LOTS), P^+-points, P^--points and naturally P^+-space and P^--space are defined and an example of a P^+-space without P^--points, which is also an example of a LOTS almost P-space without P-points is given. Using these concepts, we show that in the category of linearly ordered topological spaces, quasi F-spaces and almost P-spaces coincide. We also show that a LOTS is sequentially disconnected if and only if it is either disconnected or it has at least one almost P-point.

Mathematics Subject Classification: Primary 54C40.

Keywords: Almost P-point, quasi F-space, $P^+(P^-)$-space, sequential space, sequentially connected space, tightness.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

fuzzy coprimary submodules

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Abstract

Let R be a commutative ring with non-zero identity and M a non-zero unitary R-module. This paper deals with the concept of fuzzy coprimary submodules. We define this notion and study some of its basic results. The behavior of this concept with fuzzy localization will be studied.

Mathematics Subject Classification: 08A72.

Keywords: fuzzy coprimary submodules, fuzzy attached primes, fuzzy prime and primary ideals

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The stability analysis of meshless method for Schrödinger-KdV equation

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Iran.

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Faculty of Mathematical Science, University of Tabriz,
Iran.

Abstract

This paper presents analysis of the stability of RBF collocation scheme using matrix method for the coupled Schrödinger-KdV equations. Dependency of stability to eigenvalues of collocation matrices, time step size and other parameters for a fixed number of collocation points are discussed.

Mathematics Subject Classification: 41A21, 41A30, 41A63.
Keywords: Schrödinger-KdV equation, Radial basis functions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

An Adaptive Retrospective Trust Region Method for Unconstrained Optimization

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Department of Mathematics, K. N. Toosi University of Tech, P. O. Box 16315-1618, Tehran, Iran.

Abstract

In this paper, we present a new trust region method for unconstrained optimization which is a combination of an adaptive trust region method with the RTR method introduced by Bastin et al. in 2008 [**?**]. Using some standard assumptions on the problem, the global convergence and the first and second order optimality conditions have been provided on limit points of the sequence generated by the new algorithm. Numerical results of the new algorithm on CUTEr problems have been also reported and compared with the result of the RTR and adaptive trust region method.

Mathematics Subject Classification: 65K05, 65K10.

Keywords: Unconstrained optimization, adaptive trust region method, RTR.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

finite element method and surface elliptic equations

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Abstract

In this study we consider a new finite element method for discretization of elliptic equations on surfaces. The idea of this approach is to use finite element spaces that are induced by triangulations of an outer domain to discretize the partial differential equations (PDE) on surface. It has been shown that the method has optimal order of convergence both in the H^1- and L^2-norm.

Mathematics Subject Classification: 65N30, 65N12, 65N15.
Keywords: Finite element, Convergence, Error bounds.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Differential Polynomial Rings over Weak-Armendariz Rings

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A. Moussavi

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Abstract

Let δ be a derivation on a ring R and $R[x;\delta]$ be the differential polynomial ring over R. We introduce δ-weak Armendariz rings which are a generalization of weak-Armendariz rings, and investigate their properties. We show that if R is semi-commutative and δ-compatible, then R is δ-weak Armendariz if and only if $R[x;\delta]$ is weak-Armendariz. As a consequence we extend related results of [3].

Mathematics Subject Classification: Primary 16S36, Secondary 16D25.

Keywords: weak-Armendariz ring, semicommutative ring, δ-compatible ring, differential polynomial ring.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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LS[9](2,4,29) Exists

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O. Naserian

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Abstract

The existence of some family of large sets of size nine are investigated. We employ the Kramer-Mesner matrix to construct the missing case $LS[9](2, 4, 29]$. We also show that in cases $LS[9](2, 3, v)$ and $LS[9](2, 4, v)$ the trivial necessary existence conditions are sufficient.

Mathematics Subject Classification: Primary 05B05, Secondary 05B07

Keywords: t-design, large set.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

τ-Lifting and Strongly τ-Lifting Modules

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Abstract

In this article we introduce the notions of τ-lifting and strongly τ-lifting modules. The τ-lifting modules generalize lifting modules but strongly τ-lifting modules give a specialization of lifting modules. Necessary and sufficient conditions for finite direct sum of τ-lifting (respectively strongly τ-lifting) modules to be τ-lifting (respectively strongly τ-lifting) are obtained.

Mathematics Subject Classification: 16D90, 16S90.
Keywords: τ-Lifting modules, Strongly τ-Lifting modules.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Pullback diagram in Hilbert C^*-modules

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M. Chakoshi

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Abstract

In this talk we study certain morphisms of linking algebras of Hilbert C^*-modules and extend some known results to generalized linking algebras. We also investigate pullback diagrams in Hilbert C^*-modules.

Mathematics Subject Classification: 46C50, 47L08.
Keywords: linking algebra, extension of Hilbert C^*-algebra, pullback.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Short proofs of two known theorems on group coloring of graphs

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G. Raeisi

School of Mathematics, Institute for Research in Fundamental Sciences (IPM), P.O.Box: 19395-5746, Tehran, Iran.

Abstract

Lai and Zhang [Graphs Combin. **18** (2002), 147–154] proved that the group chromatic number of a simple K_5-minor free graph is at most 5. In addition, Lai and Li [Graphs Combin. **21** (2005), 469–474] gave the same result for a simple $K_{3,3}$-minor free graph. In this paper, we give a short proof of 5-group choosability of H-minor free graphs, where $H \in \{K_5, K_{3,3}\}$.

Mathematics Subject Classification: 05C15, 05C20.
Keywords: Group choosability, K_5-minor free graphs, $K_{3,3}$-minor free graphs.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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MAXIMUM AND MINIMUM OF THE SUM OF ELEMENT ORDERS OF FINITE GROUPS OF THE SAME ORDERS

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Abstract

Given a finite group G, let $\psi(G) = \sum_{g \in G} o(g)$, where as usual, $o(g)$ is the order of the element g. In this paper we will show that the maximum value of ψ on the set of groups of order n, where n is a positive integer, will occur at the cyclic group C_n. We also investigate the minimum value of ψ on the set of groups of the same order.

Mathematics Subject Classification: 20D60.
Keywords: Element Orders, Finite Groups.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Variational iteration method for solving non linear integral equations

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Abstract

In this paper, we use a technique for solving integral equations which is based on He's variational iteration method. In this approach, at first, we turn the given integral equation to the integro-differential equation and next we apply the He's variational iteration method to get the values of approximate solutions. An example is solved to show the efficiency and accuracy of the method.

Mathematics Subject Classification: Primary 35A15, Secondary 45G10

Keywords: Variational iteration method, Non linear integral equations.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Bifurcation of Hill Regions in Restricted Collisional N+1-Body problem

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Abstract

For restricted collisional N+1-body problem, we show the existance and describe regions in physical and configurational space where motion cannot occure. These regions are found by Hill in restricted three-body problem which is stablished as a model for three body system sun-earth-moon.

Keywords: celestial mechanics, restricted problems ,collision, bifurcation, jaccobian integral .

[1]speaker

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Variational Iteration Method For Solving Non Linear Integral Equations

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Abstract of 41st Annual Iranian Mathematics Conference
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Multiplicity results for a critical quasilinear elliptic system with concave- convex nonlinearites

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Abstract

In this paper, we consider a quasilinear elliptic system

$$\begin{cases} -\Delta_p u = \lambda |u|^{q-2}u + \frac{p\alpha}{\alpha+\beta}|u|^{\alpha-2}u|v|^{\beta} & in\ \Omega, \\ -\Delta_p v = \mu |v|^{q-2}v + \frac{p\beta}{\alpha+\beta}|u|^{\alpha}|v|^{\beta-2}v & in\ \Omega, \\ u = v = 0 & on\ \partial\Omega, \end{cases}$$

Where $\lambda, \mu > 0,\ 1 < q < p < N,\ \Delta_p u = div(|\nabla u|^{p-2}\nabla u)$ is the p-Laplacian, $\alpha > 1, \beta > 1$ satisfy $\alpha + \beta = p^*$ and $p^* = \frac{pN}{N-p}$ denotes the critical sobolev exponent. By variational methods, we study multiplicity results of positive solutions.

Mathematics Subject Classification: 35j65, 35j50, 35j55.
Keywords: Elliptic system; Nehari manifold, Concave- convex, Critical sobolev exponet, Variational methods.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Bayesian Inference for Multivariate Normal Distribution

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N. khosravi

Abstract

In this talk we propose some characteristics of inverted matrix variate gamma distribution. Further Bayes estimators for multivariate normal distribution, using conjugate prior knowledge under square error and Kullback Leibler divergence loss functions, are also derived.

Mathematics Subject Classification: 62H99
Keywords: Bayes estimator, Conjugate prior distribution, Inverted matrix variate gamma distribution, Kullback Leibler divergence loss function, Multivariate normal distribution, Square error loss function

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relations between dual of Bass numbers, Bass numbers and Betti numbers

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Abstract

Let R be a commutative Noetherian ring and M be an R-module. For a prime ideal $\mathfrak{p}$ of R the invariants $\pi_i(\mathfrak{p}, M)$ has been studied using the minimal flat resolution of M over Gorenstein rings. In this study we will give some results about the numbers $\pi_i(\mathfrak{p}, M)$. Then some relations between Bass numbers, $\pi_i(\mathfrak{p}, M)$ and $\beta_i(M)$ will be investigated.

Mathematics Subject Classification: 13C11, 13E05.
Keywords: Bass number, dual of Buss number, Betti number.

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Delta-shape basis functions for solving RLW equation

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Abstract

A meshfree technique based on a global collocation method using the Delta-shape basis functions for the numerical solution of the regularized long wave (RLW) equation is presented. Accuracy of the method is tested in terms of L2 and L∞ error norms, propagation of single solution is simulated and conservation properties of mass, energy and momentum of the RLW equation are reported.

Mathematics Subject Classification: 65M70, 35C08.
Keywords: Delta-shape basis functions, RLW equation.

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AN ADJOINT BETWEEN POINTED AND POWER SET ALGEBRAS

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Kerman, Iran.

S. N. HOSSEINI

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A new IDEA method for priority determination in AHP

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Abstract

The estimation of the relative weights of criteria\ alternatives plays an important role in the Analytical Hierarchy Process (AHP). In a conventional pairwise comparison matrix, 1-9 ratio scales are used to elicit exact comparisons. However due to uncertainty involved in real world, it is sometimes unrealistic and infeasible to acquire exact judgments. It is easier to provide interval judgments in a pairwise comparison matrix but sometimes our judgments are fixed points in an interval i.e. they are set data. In this paper we enter set data into a pairwise comparison matrix and propose a new imprecise data envelopment analysis (IDEA) method to deal with this situation.

Mathematics Subject Classification: Primary 00X00; Secondary 00X00.

Keywords: AHP, DEAHP, IDEA, $CCR-\varepsilon$, Assurance Region, Rank Reversal, set data, set efficiency.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

HAWAIIAN GROUPS OF HAWAIIAN EARRINGS

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Abstract

In this talk we intend to determine the structure of the n_dimensional Hawaiian group of the m-dimensional Hawaiian earring space, where $m, n \geq 1$. Also, we show that similar to homotopy functors, Hawaiian group functors preserve product, and for $n \geq 2$, Hawaiian groups are abelian.

Mathematics Subject Classification: Primary 55Q05, Secondary 55Q20, 54F15.

Keywords: Hawaiian group, Hawaiian earring, weak join.

[1] speaker

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Generalized mean value theorem to Hadamard manifolds

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Abstract

By using Clarke's subdifferential the Lebourg's mean value theorem is generalized to Hadamard manifolds. Then, some applications are introduced.

Mathematics Subject Classification: Primary 34A55, Secondary 34B24.

Keywords: Hadamard manifolds, locally Lipschitz functions, Mean value theorem.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Inverse Minisum Location Problems with Variable Coordinates

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Abstract

In this work, we consider the inverse minisum location problem with variable coordinates in d-dimensional real space in which the aim is to increase or decrease the coordinates of a set of given points at minimum total cost with respect to modification bounds such that a predetermined point becomes a minisum location. We develop polynomial time and pseudo-polynomial time solution algorithms for the problem under the rectilinear, the squared Euclidean and the Chebyshev distance norms. Moreover, we discuss the NP-hardness of the models under investigation.

Mathematics Subject Classification: Primary 90C27; Secondary 90B80, 90B85.

Keywords: location problems, Combinatorial optimization, Inverse optimization.

[1]Speaker

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On endomorphism ring of $*-$prime modules

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C. Lomp

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Abstract

An open problems about $*$-prime module stated in [**?**]. He asks for an example of a $*$-prime module whose endomorphism ring is not prime. We will try to answer to this open problem.

Mathematics Subject Classification: Primary 16S50, Secondary 16D10, 16D60, 16D80.

Keywords: *-prime modules.

[1]speaker

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Locally graded groups with a Bell condition on infinite subsets

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Abstract

Given an integer $n \neq 0, 1$ .let β_n be the variety of n-Bell groups defined by the low $[x^n, y] = [x, y^n]$, and let β_n^* be the class of all groups G in which, for any infinite subsets X and Y of G, there exist $x \in X$ and $y \in Y$ such that $[x^n, y] = [x, y^n]$. We prove that every infinite β_n^*-group G is n-Bell in the following cases: G is finitely generated and locally graded; G is locally soluble; G is locally graded and $|n|$ or $|n-1|$ is equal to $2^a p^b$ (where p is a prime, and a, b are non-negative integers).

Mathematics Subject Classification: 90C27; 90B80, 90B85.

Keywords: locally graded, n-Bell group, υ-group.

[1] speaker

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Derivation on Generalized Triangular Matrix Rings

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Coinvariants of quasi-Hopf bimodules over quasi-Hopf algebras as Hom-functor

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Abstract

For a Hopf algebra H and a right H-Hopf module $M \in \mathbb{M}_H^H$, the coinvariants submodule M^{coH} has been considered by Larson and Sweedler in order to prove the *Fundamental Theorem of Hopf Modules*. The coinvariants functor $(-)^{coH} : \mathbb{M}_H^H \to \mathbb{M}_k$ has been observed by R. Wisbauer as the Hom-functor $\mathrm{Hom}_H^H(H, -)$ without needing any antipode.

Over a quasi-Hopf algebra H, the *Fundamental Structure Theorem* for quasi-Hopf H-bimodule has been formulated by introducing two versions of *coinvariants* as the inverse equivaleces for the comparison functor $- \otimes_k H : {}_H\mathbb{M} \to {}_H\mathbb{M}_H^H$.

In this paper, for a qusi-Hopf algebra H, we will introduce a version of Hom-functor as right adjoint to the comparison functor $- \otimes_k H : {}_H\mathbb{M} \to {}_H\mathbb{M}_H^H$. For this, we do not need any quasi-antipode. In case H is a quasi-Hopf algebra, we show that this Hom-functor is inverse equivalence to the comparison functor and it is isomorphic to both generalized versions of coinvariants.

Mathematics Subject Classification: Primary 16W30; Secondary 18A40, 18D10.

Keywords: Quasi-Hopf algebra, Coinvariants, Monoidal category.

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On the Ratio of Rice Random Variables

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Abstract

The ratio of independent random variables arises in many applied problems. In this article, the distribution of the ratio X/Y is studied, when X and Y are independent Rice random variables. Ratios of such random variable have extensive applications in the analysis of noises of communication systems. The exact forms of probability density function (PDF), cumulative distribution function (CDF) have been derived in terms of several special functions.

Mathematics Subject Classification: 33C90, 62E99.
Keywords: Rice Distribution, Ratio Random Variable, Special Functions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Krein Condition For The Existence Of Strongly Regular Graphs

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Abstract of 41st Annual Iranian Mathematics Conference
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Cartan equivalence problem for Riemannian metrics

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Abstract

In present paper, we determine the Cartan local equivalences problem for the flat Friedman metric.

Mathematics Subject Classification: Primary 53A55, Secondary 53B21, 53B99.

Keywords: Cartan equivalence problem, Coframe, Gaussian curvature, The flat Friedman metric.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Rough lattices

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Abstract

In this papers, we apply rough sets on lattices and introduce the notions of rough sublattice and rough ideal. Also we prove some related properties of approximations in sublattices and ideals.

Mathematics Subject Classification: Primary 03XG10; Secondary 18A32.

Keywords: rough set; lower approximation; upper approximation; rough sublattice; rough ideal

[1] speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

Solving Linear Fredholm Fuzzy Integral Equations Of The Second Kind By Artificial Neural Networks

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Abstract of 41st Annual Iranian Mathematics Conference
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ON INTEGRABILITY OF ALMOST PRODUCT RIEMANNIAN STRUCTURES

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Abstract

Let M be a $C^\infty-$ manifold of finite dimension n. We denote by $\mathcal{T}_s^r(M)$ the module over $F(M)$ of all C^∞-tensor fields of type (r,s) on M , where $F(M)$ is the algebra of C^∞-functions on M. Let M be an almost product manifold with almost product structure φ. It is well known that the integrability of φ is equivalent to the vanishing of the Nijenhuis tensor N_φ. In this paper we consider another possible condition of the integrability of almost product structures on Riemannian manifolds.

Keywords: Product Structure, Manifold, Tensor field.

[1]speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

MULTI-VALUED $(\varphi - k) - B$ contraction

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Abstract

In this paper, we shall generalize the definition of $(\varphi - k) - B$ contraction to multi-valued mappings. Then we shall prove two fixed point theorems for multi-valued $(\varphi - k) - B$ contraction mappings in probabilistic metric space.

Keywords: Probabilistic metric space, $(\varphi - k) - B$ contraction, fixed point.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Numerical solution of the nonlinear Klein-Gordon equation using cubic B-spline scaling functions and generalized Thin plate splines

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Abstract

In this paper,we propose two numerical schemes for solving the nonlinear Klein-Gordon equation, using cubic B-spline scaling function and generalized thin plat splines.

Mathematics Subject Classification: 65D07, 65M06, 65Zxx.
Keywords: Klein-Gordon equation, Cubic B-spline scaling functions, Radial basis functions, Thin plate splines.

[1]speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

A weighted algorithm based on variational iteration method for identifying heat transfer coefficient

Kh. Paryab

A.R. Yazdanian [1]

Abstract

In this paper, we consider an inverse problem of heat equation with Robin boundary condition for identifying heat transfer coefficient. The numerical solution is developed by using a weighted algorithm based on variational iteration method. This method uses initial and boundary conditions simultaneously and effectively for constructing the solution. Using this method a rapid convergent sequence can be obtained which tends to the exact solution of the problem.

Mathematics Subject Classification: Primary 20F28, Secondary 20E22.

Keywords: Heat transfer coefficient, Inverse problems, Variational iteration method

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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The Properties of Generalized Soluble Groups

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Centre of Excellence in Analysis on Algebraic
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Abstract

In the present article we introduce a new concept of generalized soluble groups, which will be called autosoluble groups.
Using the autocommutators, a new series will be constructed, which is some how a generalization of the derived series of a given group. We determine the structure of such groups, when the generalized series are terminated.

Mathematics Subject Classification: 20D45, 20E36, 20K10, 20K15.
Keywords: Soluble group, autocommutator subgroup, absolute centre, autosoluble group.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Point Estimation for the Burr Type XII Distribution Based On Type II Censored Data

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Abstract

This article deals with the point estimation of unknown parameters of the type II censored Burr Type XII distribution. We consider the maximum likelihood procedure of the unknown parameters. We also obtain Approximate Bayes estimators of the unknown parameters under the assumptions of gamma priors on both of them.

Mathematics Subject Classification: Primary 62N01, Secondary 62N02.

Keywords: Burr Type XII distribution, Bayes estimator, Maximum likelihood estimator, Type-II censoring.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Minimal CL-Subgroups and Central automorphisms group of finite gourops

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Abstract

Let G be a finite group and S_G be symmetric group of G. An automorphisms σ of G is said to be central if σ commutes with every inner automorphisms of G. The central automorphisms group $Aut_c(G)$, is of great importance in studying $Aut(G)$. We say that a subgroup Q of G is a centrally large subgroup, or CL-subgroup of G if $|Q||Z(Q)| \geq |Q^*||Z(Q^*)|$ for every subgroup Q^* of G. In this note, we use minimal centrally large subgroups to obtain some further properties of $Aut_c(G)$. In particular, we obtain some sufficient conditions to show that $Aut_c(G) = Aut(G)/Inn(G)$.

Mathematics Subject Classification: Primary 20F28, Secondary 20E22.

Keywords: Centrally large subgroup, Central automorphisms, Full automorphisms group.

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comparing the interval efficiency ofradial non-radial and Hybrid models with together in DEA

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Abstract

In this paper we introduce an interval Hybrid (IHybrid) model in data envelopment analysis (DEA) to find it's interval efficiency, then we extract the interval efficiency of radial and non-radial models from the proposed model. Finally in a theorem we will compare the interval efficiency of these models with together.

Keywords: IHybrid, $IHybrid'$, ICCR, IBCC, ISBM, $ISBM'$ interval efficiency.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Bayes action for different balanced-type loss functions

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Abstract

In this approach we propose constrained Bayes estimator in a normal population, when it is suspected that priori a pre-specified value may settle as the main parameter. The constrained Bayes estimator is derived under the balanced loss function for difference weight functions and the relative risk functions are also computed.

Mathematics Subject Classification: Primary 62F15; Secondary 62F30.

Keywords: Balanced loss function, Conjugate prior distribution, Constrained Bayes.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

F-Permutations Matrices

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Abstract

In this paper, the concept of F-permutation is introduced. Then by applying this notion, we give a presentation of an F-permutation by F-permutation matrices. We show that, there is a one-to-one corresponding between all F-permutations on n-letters and all F-permutation matrices.

Mathematics Subject Classification: 20N25, 08A72.
Keywords: fuzzy permutation matrices.

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n-fold positive implicative hyper K-ideals

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Abstract

In this paper we are supposed to introduce the definitions of n-fold positive implicative hyper K-ideals. These definitions are the generalizations of the definitions of positive implicative hyper K-ideals, which have been defined in [12]. Then we obtain some related results.

Keywords: Inequality.

[1] speaker

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THE USE OF MAPLE PLATFORM FOR THE STUDY OF GEODESICS IN THE SCHWARZSCHILD DE SITTER SPACE-TIME

A. TALESHIAN[1]

M. EBRAHIMI

[1]speaker

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Analytical and Numerical Solution of Hyperbolic Heat Conduction in Cylindrical Coordinates

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H. Eskandar

S. Saedodin

P. Salehi

Abstract

In this paper, the hyperbolic effect in a cylinder subjected to a heat flux boundary condition is carried out. Equations are solved by deriving the analytical and the numerical solution of the hyperbolic heat conduction equation. The main aim of this paper is to obtain some possibly explicit analytical solution of the (1+2)-dimensional hyperbolic heat conduction equation for given initial and boundary condition with method of separation of variables.

Keywords: Analytical Solution, Numerical Solutin, Hyperbolic Equation, Separation of Variables

[1]speaker

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Some types of hyper MV-ideals in hyper MV-algebras

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Kerman Branch, Kerman,
Iran.

Abstract

In this paper we define hyper MV-ideals of types 1,2,3 and 4 in hyper MV-algebras. Then we prove that hyper MV-ideals of type 1 and type 4 are equivalent and by some examples we show that the hyper MV-ideals of types 1,2 and 3 are not equivalent. Finally we determine the relationships between hyper MV-ideals of types 1,2, and 3.

Mathematics Subject Classification: 06D35, 06F35, 03G25.
Keywords: Hyper MV-algebra, Hyper MV-ideal.

Abstract of 41st Annual Iranian Mathematics Conference
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Some Results on Associated Prime Submodules

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Abstract

Let R be commutative ring with identity and M be a unitary R-module. the notions of associated and supported prime submodules are considered. Our aim is to extend the results concerning associated and supported prime ideals of a module and find new properties when the modules are multiplication, have finite length, are finitely generated or weakly finitely generated.

Keywords: Associated and supported prime submodules, Multiplication module, Prime submodules, Radical of a submodule.

[1]Speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

A Fixed Point Theorem on Ordered Metric Space

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Abstract

Fixed point results are presented for single-valued generalized weak contractions in a complete metric space endowed with a partial order.

Mathematics Subject Classification: 47H10.
Keywords: fixed point, generalized weak contraction, partially ordered set, lower semi-continuous.

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Osculatory interpolation in non-overlapping domain decomposition method

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Abstract

We present a non-overlapping domain decomposition method (DDM) for the method of fundamental solution (MFS) to improve the conditioning of the problem [**?**]. This method often deal with the Poisson-type equations by approximating a particular solution via radial basis functions (RBF). When imposing the Numann boundary condition, the use of osculatory RBF (ORBF) has a considerable effect on the accuracy. In the case of employing a non-overlapping DDM with an interface boundary, the physical matching conditions including a Nummann type are essentially applied. Therefore, the use of ORBF can improve the quality of the solution.

Mathematics Subject Classification: 65C20, 35A08, 65M55.
Keywords: Method of fundamental solution; Non-overlapping domain decomposition.

[1]speaker

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Maximum Zagreb, Minimum Hyper-Wiener and Graph Connectivity

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B. Taeri

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Abstract

Among all n-vertex graphs with edge or vertex connectivity k, i.e graphs with $\kappa = k$ or $\kappa' = k$ for $1 \leq k \leq n-1$, the graph $G = K_k \vee (K_1 + K_{n-k-1})$ is the unique graph with maximum sum of square of vertex degrees (i.e with maximum Zagreb index). This is also the unique n-vertex graphs with edge or vertex connectivity k whose hyper-Wiener index is minimum.

Mathematics Subject Classification: 92E10, 05C05 .
Keywords: Graph invariants, Vertex-connectivity, Edge-connectivity, Zagreb index, Hyper-Wiener index, extremal graphs.

[1]speaker

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Numerical Range of Some Weighted Composition Operators

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Abstract

The theory of numerical range has played a crucial role in the study of some algebraic structures. The aim of this paper is to determine the numerical range of some weighted composition operators on the weighted Hardy space.

Mathematics Subject Classification: Primary 47B33, Secondary 47B37.

Keywords: weighted Hardy space, weighted composition operator, numerical range.

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A class of Banach algebras induced by conditional expectations

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Abstract

In this note by using some properties of conditional expectation operators a class of Banach algebras introduced and then some properties of this class will be investigated.

Mathematics Subject Classification: Primary 47B20, Secondary 47B38.

Keywords: Conditional expectation, multipliers, multiplication operators.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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fuzzy subgroups and fuzzy cosets

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Abstract

In this paper, we introduce the concept of fuzzy sets and fuzzy subgroups and then we present some of its basic properties like left (right) cosets of fuzzy subgroups. First we introduce some new concepts of fuzzy group theory and then by using the definitions we obtain the same theorems and results on fuzzy cosets of a fuzzy subgroup and cosets of a subgroup of a group.

Keywords: fuzzy sets, fuzzy algebra, fuzzy subgroups, fuzzy cosets.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Lattice NystrÖm methods for Hammerstein integral equations (HIE)

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Abstract

We return to earlier work in Dick et al. J. Complexity **23** (2007), concerning to Fredholm linear integral equation of the second kind. In the present work, we emphasize the need for using Lattice-Nyström on nonlinear integral equation. Our study is motivated by problems in statistics and mathematical finance, where integral equations can arise as a result of financial applications. This method causes that the computational cost is to reduce. We obtain the solution of nonlinear integral equation by the Nyström method using N rank-1 lattice points.

Keywords: Nonlinear integral equation, lattice rules, financial mathematics.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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THE ASYMPTOTIC FORM OF EIGENVALES AND EIGENFUNCTION OF THE STURM-LIOUVILLE PROBLEM WITH DISCONTINUOUS CONDITIONS

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A. JODAYREE AKBARFAM

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Ricci Flow and Bi-invariant Metrics on $\mathfrak{sl}(3,\mathbb{R})$

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Abstract

n compact Lie groups with bi-invariant metrics, all metrics are Einstein and therefore fix points of Ricci flow. In the paper, we will discuss non-compact Lie groups and we will prove that in this case bi-invariant metrics, if exist, are semi-metrics and Ricci flow is not necessarily an ODE.

Keywords: Lie Groups, Ricci Flow, Bi-invariant metrics

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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DUAL GENERALIZED QUATERNIONS IN SPATIAL KINEMATICS

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Abstract

In this paper, the dual generalized quaternions are studied and some of their basic properties are investighated.Also, two Hamilton operators are defined and algebra of dual generalized quaternions is developed using these operators. Properties of Hamilton operators are then used to find some mathematical expressions for screw motion of a line and a point.

Mathematics Subject Classification: 15A33, 15A66, 53A17.

Keywords: Dual Generalized Quaternion, Hamilton Operator, Screw Motion.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solving fractional Riccati differential equations using homotopy perturbation Padé technique

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Abstract

In this paper, the homotopy perturbation method (HPM) is reintroduced with the enhancement of Padé approximants to lengthen the interval of convergence of HPM when used alone in solving nonlinear problems.

Mathematics Subject Classification: 34A08, 35C10, 26A33.
Keywords: Riccati equation, Fractional derivative, Homotopy perturbation method, Padé approximants.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Stochastic Approximation Boosting Algorithm for Spatial Censored Data

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Abstract

Sometimes we deal with situations where the data collection mechanism is such that the values of spatial phenomenon of interest is not completely observed. In such cases, we adopt a spatial model with censored data. Due to the likelihood function involves analytically intractable integrals and hence, direct maximization of the likelihood is numerically difficult, this work utilizes stochastic approximation boosting algorithm to obtain maximum likelihood estimates of the model parameters. In fact, this algorithm employs boosting with a variant of stochastic approximation to handle censored data problems.

Mathematics Subject Classification: Primary 91B72; Secondary 91D25, 62L20.

Keywords: Boosting; Spatial model; Censored data; Stochastic approximation.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Maximum and Minimum Of The Sum Of Element Orders Of Finite Groups Of The Same Orders

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Abstract of 41st Annual Iranian Mathematics Conference
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C^1-PERSISTENTLY SENSITIVE HOMOCLINIC CLASSES

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H. Gharib

S. Jalalipoo[1]

Abstract

Let f be a diffeomorphism of a closed n-dimensional C^∞ manifold, and p be a hyperbolic saddle periodic point of f. In this paper, we introduce the notion of C^1-persistently sensitive for a closed f-invariant set. We prove that for the homoclinic class $H_f(p)$ of f, if $f_{|H_f(p)}$ is C^1-persistently sensitive then $H_f(p)$ admits a dominated splitting. Especially, on a 3-dimensional manifold, the splitting on $H_f(p)$ is partially hyperbolic, and if in addition, f is far from homoclinic tangency, then $H_f(p)$ is strongly partially hyperbolic.

Mathematics Subject Classification: 37B20, 37C29, 37C50.
Keywords: Persistently sensitive, Homoclinic class, Dominated splitting, Partially hyperbolic, Strongly partially hyperbolic.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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New approach for obtain bound for inverse of the tridiagonal matrix in general

R. Jalilian

Abstract

The bound for inverse of the tridiagonal matrix $P_n(x_i, z_i, y_i) = [\delta_{i,j}]$ so that $\delta_{i,i} = z_i, \delta_{i,i-1} = -x_i$, and $\delta_{i,i+1} = -y_i$ are obtained if $x_i \geq 0, z_i > 0, y_i \geq 0$, and $x_i + y_i \leq z_i$. Employing these expressions, we compute $\|P_n^{-1}(x_i, z_i, y_i)\|_\infty$ which is required in proving the convergence analysis of the numerical methods.

Mathematics Subject Classification: 34C12, 15A09, 65F05.
Keywords: Band matrix, Monotone matrix, Difference equation.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Adaptive Galerkin Frame Methods for Solving Operator Equations

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Abstract

In this paper we use frames to construct corresponding trial spaces for an adaptive Galerkin scheme and design an adaptive algorithm in order to give an adaptive approximation solution to operator equations. We describe construction, prove error estimates for the resulting scheme and then investigate computational complexity.

Mathematics Subject Classification: 65J10, 65L99, 65F99.

Keywords: Frames. Adaptive solution. Galerkin method. N-term approximation. Quasi-Banach spaces $\ell_\tau^\omega(\Lambda)$.

[1]speaker

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Solving boundary value problems of fractional order by Galerkin methods with fractional polynomials

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Abstract

n this paper, we use the fractional polynomials on interval $[0, 1]$ to solve the nonlinear boundary value problems of fractional order by Galerkin methods.

Mathematics Subject Classification: Primary 65L60, Secondary 34A08.

Keywords: Galerkin method, Fractional integral, Caputo fractional derivative, fractional polynomials.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Crossed products of E-unitary inverse semigroups

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Abstract

The main result of this paper is a partial crossed product decomposition for the C^*-algebras of a strongly 0-E-unitary inverse semigroup. We first construct a partial action α of G on the C^*-algebra of the semilattice of idempotents of a strongly 0-E-unitary inverse semigroup S and show that $C_0^*(S)$ is isomorphic to a crossed product of $C_0^*(E)$ by partial action α of group G.

Mathematics Subject Classification: Primary 16W22, Secondary 46L55, 16S35.

Keywords: crossed products, inverse semigroups, partial actions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A More General Case on the Norm of Extension of a Hilbert's Type Linear Operator in the continuous form

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J. Behboodian

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Abstract

The main purpose of this paper is to study a more general case on the norm of extension of a Hilbert's type linear operator in the continuous form. In addition to expressing the norm of a Hilbert's type linear operator $T : L^2(0,\infty) \to L^2(0,\infty)$, more general case such that $0 < \lambda \leq 1$ has been studied in this article. By putting $\lambda = 1$ a norm of extension of Hilbert's integral linear operator is obtained.

Mathematics Subject Classification: 26D15, 47A07.
Keywords: Beta Function, Inner Product, Holder's Inequality, Norm, Hilbert's Inequality, Extension of Hilbert's Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Infinitesimal Generator of A Unitary Operator on Hilbert C^*-modules

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Abstract

In this talk, we investigate the infinitesimal generator of a C_0-group unitary operators in the framework of Hilbert C^*-modules.

Mathematics Subject Classification: Primary 46C50, Secondary 47L08.

Keywords: infinitesimal generator, C_0-semigroup, C_0-group, Hilbert $\mathcal{A}$-module, unitary operators, adjointable operators.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Finite Volume Method for solution of Diffusion Equation

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M. Hajisadeghi[1]

Abstract

This paper presents a finite volume method for diffusion equation on cartesian product nonuniform meshes in two dimensions. The error estimate in a discrete H_0^1- and L_2-norm for the approximate solution is proved.

Mathematics Subject Classification: 74S10, 65N15.
Keywords: Finite volume methods, Error bound; Diffusion Equation, sobolev spaces.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Special metric in product space

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Abstract

In this paper we use tensor product to construct the curvature tensor of convolution manifolds and investigate fundamental property of this kind of manifolds. In particular we study the relationship between natural product manifold and convolution manifold.

Mathematics Subject Classification: 53B20, 53C50, 53C42.
Keywords: twisted product, warped product, convolution metric, flat convolution Riemannian manifold.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON THE NORM OF CERTAIN COMPOSITION OPERATORS ON THE GENERALIZED HARDY SPACES

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Abstract

In this paper, we obtain the norm inequality and the norm of certain composition operators on $H_{F,p}$.

Mathematics Subject Classification: Primary 47B33, Secondary 47B38.

Keywords: eneralized Hardy spaces, norm, norm inequality, Banach space.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Bipartite IP-graph

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Abstract

The IP-graph of a naturally valenced association scheme arising from the transitive action of a group on a set and some of its properties has been studied recently. In this paper we introduce the bipartite version of this graph, namely bipartite IP-graph which we denote it by BIP. We also investigate some of its properties.

Mathematics Subject Classification: 05E30.
Keywords: Bipartite divisor graph, Association scheme.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Locally regular Finsler $s-$manifolds

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Abstract

In this paper we study locally regular Finsler $s-$manifolds. We introduce these spaces and show that any such space is homogeneous. Also we show that these spaces and the covering space of them are locally isomorphic.

Mathematics Subject Classification: 53C60, 53C35.

Keywords: $s-$structure, Generalized symmetric space, Locally regular Finsler $s-$manifold.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Symplectic classification of 2-forms in dimension 4

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Abstract

Classification of exterior 2-forms on 4-dimensional symplectic vector space (V, Ω) with structure 2-forms Ω is considered. This classification will process by finding orbits of action $GL(V)$ on the space of 2-forms on 4-dimensional symplectic vector space V which is called *Jacobi planes* in the sequel.

Keywords: Symplectic Geometry, differential forms, Pfaffian.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Best proximity pairs

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Abstract

. The object of our study is best proximity pairs and proximity points in normed space X. Also we give efficient algorithm for finding distance between two sets is presented

Mathematics Subject Classification: 41A65, 41A52, 46N10.
Keywords: Best proximity pairs, pair minimizing sequence, best proximity points.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On properties of hyper BCK-ideals in the hyper BCK-algebras with condition r-m

Habib Harizavi

Abstract

In this paper, we investigate the generated (weak)hyper BCK-ideal of the hyper BCK-algebra satisfying condition r-m and show that the notions of weak hyper BCK-ideal and hyper BCK-ideal are coincide. Also we characterize the elements of generated hyper BCK-ideal.

Mathematics Subject Classification: 06F35, 03G25
Keywords: Inequality.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Poisson Generalized-Gamma Models

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Abstract

This paper considers Poisson models and addresses the problem of overdispersion. We extend the common probability models for count data using mixture of Poisson and generalized gamma distributions to handle the problem. It is shown that the proposed model includes several distributions, previously adopted to the literature, as special cases. Furthermore, due to the computational complexity of integrals involved in the marginal likelihood, an alternative approach is suggested.

Mathematics Subject Classification: Primary 62JXX, Secondary 62J12

Keywords: Count Data, Mixed Models, Overdispersion, Random Effects.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Galerkin Method for Solving the Hyperbolic Telegraph Equation

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Abstract

Recently, it is found that telegraph equation is more suitable than ordinary diffusion equation in modelling reaction diffusion for such branches of sciences. In this article, a numerical scheme for solving the one-dimensional hyperbolic telegraph equation is presented. The method is based upon Legendre polynomials approximation. The properties of Legendre polynomials are presented. These properties together with Galerkin method utilized to reduce the telegraph equation to the solution of algebraic equations. The results of numerical experiments are presented, and are compared with analytical solutions to confirm the good accuracy of the presented scheme.

Mathematics Subject Classification: Primary 58J45, Secondary 37L65

Keywords: Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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An Adjoint Between Pointed Sets And Power Set Algebras

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Abstract of 41st Annual Iranian Mathematics Conference
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Legendre wavelet method for solving multi-order fractional differential Equations

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Abstract

In this paper Legendre wavelet and its operational matrix of integration are implemented to give approximate solutions for multi-order fractional differential equations. The main characteristic behind this technique is that it reduces such problems to those of solving a system of algebraic equations thus greatly simplifying the problem. Numerical results show that this approaches is easy to implement and accurate when applied to multi-order fractional differential equations

Keywords: Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical solution of integral equation by using combination of chebychev collocation method and lagrange interpolation

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solving shortest path problem using IWO and IWO/PSO in graphs with negative weight cycle

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Abstract

This paper presents two approaches based on invasive weed optimization (IWO) algorithm and hybrid of IWO and particle swarm optimization (IWO/PSO) to the shortest path (SP) routing problem in graphs with negative weight cycle. Route optimality ratios, which is obtained by applying these approaches on some case studies, show the efficiency of the given schemes.

Mathematics Subject Classification: 90C35, 90C59.
Keywords: Shortest path problem, Evolutionary optimization, Path encoding.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Mathematical Model for Steady blood flow in uniform straight and rigid circular tube

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Abstract

In this paper an effort has been made to investigation the steady blood flow with periodic body acceleration in the presence of uniform transverse magnetic field by considering blood as a couple stress fluid in an uniform straight and rigid circular tube. The main idea of this work is the mathematical study of this phenomenon in order to obtain analytical expressions for axial velocity.

Mathematics Subject Classification: 76BXX; 76DXX.

Keywords: blood flow,Viscosity magnetic filed, body acceleration.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the Minimum of a Multivariate Pareto Distribution

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Abstract

Assume that $(X_1, X_2, \ldots, X_n)$ is a multivariate Pareto random vector. This note calculates an analytic formula for density of minimum of a multivariate Pareto random vector and examines the effects of the distribution parameters on the first two moments of the minimum of $(X_1, X_2, \ldots, X_n)$.

Mathematics Subject Classification: 62G32

Keywords: heavy tail, minimum, moments, multivariate Pareto distribution, survival function.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A class of integral table algebras of rank four

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Abstract

In this note, we first classify integra table algebra of rank four such that one of its non identity basis element has degree 1 and two other basis elements are the same degree $\lambda \geq 4$. Then we prove that the Krein parameters of one of this classes are nonnegative real numbers

Mathematics Subject Classification: 20C99.
Keywords: Table algebra, Krein parameters.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON RADICAL OF PRIMARY SUBMODULE OF MODULES OVER COMMUTATIVE RINGS

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S. Abbasi

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Abstract

In general the radical of a primary submodule is not prime as is valid in the ideal case. We give some sufficient conditions to this property holds in the module setting. Specially it is shown that, if M is a one-dimensional faithful multiplication module over a domain$R$ and Q is a primary submodule of M. Then either $annM$ is a radical ideal or $radQ$ is $(radQ : M)$-prime.

Mathematics Subject Classification: Primary 13A15, Secondary 13C13.

Keywords: lMultiplication module, Cancellation module, Primary module.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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THE C^*-ALGEBRA NUMERICAL RANGE OF A NILPOTENT ELEMENT

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Abstract

Let A be a C^*-algebra with unit 1. For each a $\in$ A, let V (a), v(a) and $v_0(a)$ denote its numerical range, numerical radius and the distance from the origin to the boundary of its numerical range, respectively. If a is a nilpotent element of A with the power of nilpotency n, i.e., $a^n = 0$, and $v(a) = (n.1)v_0(a)$, then we prove that $\partial V(a)$ does not contain any arc of circle.

Mathematics Subject Classification: Primary 47A12; Secondary 46K10.

Keywords: C^*-algebra Numerical range Numerical radius C^*- algebra Nilpotent element

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A Fibering Map Approach to Quasilinear Elliptic Boundary Value Problem

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Abstract of 41st Annual Iranian Mathematics Conference
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Interpolation Wavelets Based on Collocation Method for Solve Two-dimensional Fredholm Integral Equation

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Abstract

In this paper, we study the numerical solution of two-dimensional Fredholm integral equation by collocation method. Also, supposing that solutions of these equations belong to $[-1, 1]$, we use the interpolation wavelets, based on Chebyshev polynomials, for constructing the approximation subspaces. Numerical results are preformed in order to show the accuracy of the present work.

Keywords: Interpolation Wavelets, Collocation Method, Chebyshev polynomials.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On eigenvalues and boundary curvature of the numerical rang of self-inverse operators

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Abstract

For a bounded linear operator A on a Hilbert space $\mathcal{H}$, let $M(A)$ be the smallest possible constant in the inequality $D_p(A) \leq M(A)R_p(A)$. Here p is a point on the smooth portion of the boundary $\partial W(A)$ of the numerical range of A. $R_p(A)$ is the radius of curvature of $\partial W(A)$ at this point and $D_p(A)$ is the distance from p to the spectrum of A. In this paper we compute the $M(A)$ for A is self-inverse.

Mathematics Subject Classification: 47A12; 15A42; 14H50

Keywords: Numerical range,Eigenvalues, Curvature

[1]Speaker

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Numerical Solution of Abel'S Integral Equations Presented by A Fractional Differential Equation

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Abstract

We present a method for solving Able's integral equations which is presented by a fractional differential equation. Some examples are given to show the accuracy of the method.

Keywords: Abel's integral, Fractional differential equation.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A Numeration Method for Solving FDH-Hyperbolic Efficiency Models in DEA

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Abstract

This paper, introduces FDH-Hyperbolic efficiency(FDH-HE) and presents an algorithm for the computation of FDH-HE with various kinds of return to scale(RTS). The proposed algorithm obtains an optimal solution of FDH-HE without solving nonlinear integer programming problems.

Mathematics Subject Classification:

Keywords: Data Envelopment Analysis (DEA); Free Disposal Hull (FDH); FDH-Hyperbolic Efficiency; Dominated unit .

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On $\mathcal{SGC}$-projective and $\mathcal{SGC}$-injective Modules

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Abstract

Motivated by Bennis and Mahdu [**?**], we define the concept of a $\mathcal{SGC}$-projective, (resp., $\mathcal{SGC}$-injective) module M, and characterize these classes of modules, in terms of vanishing of the functors $\{Ext_{\mathcal{P}_C}(M,-)\}_{i\geq 0}$ (resp., $\{Ext_{\mathcal{I}_C}(-,M)\}_{i\geq 0}$). It is proved that a $\mathcal{SGC}$-projective (resp., $\mathcal{SGC}$-injective) module of finite $\mathcal{P}_C$-projective (resp., $\mathcal{I}_C$-injective) dimension is a C-projective (resp., C-injective) module.

Mathematics Subject Classification: 13D02, 13D05, 13D07, 18G15, 18G20, 18G25, 18G10.

[1] Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A Generalization of the SOR Method

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Abstract

In this paper, a generalization of the successive overrelaxation (SOR) method is presented and its convergence properties are discussed. Some numerical experiments are given to show the efficiency of the proposed method.

Mathematics Subject Classification: Primary 65F10

Keywords: SOR, Generalized SOR, M-matrix, Convergence.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Solving systems of Fuzzy Linear Equations by Generalized Jacobi and Gauss-Seidel methods

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Abstract

In many applications a solution to system of linear equations has to be found. In this paper we introduce the generalized Jacobi and Gauss-Seidel iterative methods for fuzzy linear system $AX = Y$ when coefficients matrix A contains crisp entries and Y is an arbitrary fuzzy vector. It will also be illustrated by some examples.

Keywords: Fuzzy linear system, Jacobi and Gauss-seidel methods.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

An oscillation criterion for second order delay differential equations

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Abstract

In this paper, we propose an oscillation criterion for second order delay differential equation.

Mathematics Subject Classification: Primary 34C10, 34K11; Secondary 34K06.

Keywords: Oscillation, delay differential equation.

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Elliptic Curves and their application in C_A–Curves

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Abstract

Now days, *elliptic curves cryptosystems* (ECC) receive attention and much efforts are being dedicated to make it more and more practical. However on the other hand elliptic curves are too special objects in the mathematical background to used for cryptosystems.

In the presented paper we study a new class of curves, i.e. C_A–curves. we use elliptic curves properties to make C_A–Curves, then see the application of these curves in cryptography.

Keywords: Elliptic Curve, C_A– Curve, Weierstrass Equation, Cryptography.

[1] Speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

Characterizations of generalized derivations and generalized Jordan derivations on Banach algebras

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Abstract

Let $\mathcal{A}$ be an algebra and $\mathcal{M}$ be an $\mathcal{A}$-bimodule. Let X be in $\mathcal{A}$ and $\delta : \mathcal{A} \to \mathcal{M}$ and $\tau : \mathcal{A} \to \mathcal{M}$ be linear maps which satisfies $\delta(AB) = \delta(A)B + A\tau(B)$ and $\tau(AB) = \tau(A)B + A\tau(B)$ for all $A, B \in \mathcal{A}$ with $AB = X$. It is shown that δ is a generalized Jordan derivation if δ is continuous and X is left (or right) invertible. Also, it is shown that δ is a generalized derivation if X is idempotent such that for $M \in \mathcal{M}$ the condition $X\mathcal{A}(I - X)M = 0$ implies $(I - X)M = 0$ and the condition $MX\mathcal{A}(I - X) = 0$ implies $MX = 0$.

Keywords: Generalized derivations, Generalized Jordan derivation, Banach algebras.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Global nonexistence for a nonlinear mean curvature equation

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Abstract

In this work we consider a nonlinear mean curvature equation, with dirichlet boundary value conditions. we show that the solution blows up in finite time even for negative initial energy.

Keywords: mean curvature, nonglobal solution, weight space.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On universal covering for Lie tori

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Abstract

In this paper we will provide a model for the universal coverings of Lie tori and we prove that the universal covering of a Lie $\Lambda-$torus of type Δ is again a Lie $\Lambda-$torus of type Δ.

Mathematics Subject Classification:

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A new family of elliptic curves with positive rank

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Abstract

In this paper, we are going to introduce a new family of elliptic curves with positive rank. These elliptic curves have been constructed with certain rational numbers, namely a, b, and c. It turns out that the torsion group of these curves are of the form $\frac{\mathbb{Z}}{2\mathbb{Z}} \times \frac{\mathbb{Z}}{2\mathbb{Z}}$.

Mathematics Subject Classification: Primary 14G05; Secondary 14H52, 11G05.

Keywords: Elliptic curves,Rank,Torsion.

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A numerical solution of the Rayleigh equation by parameter-expansion method

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Abstract

In this paper, an approximate solution of the nonlinear oscillator known as the Rayleigh equation is presented. This is application of parameter-expansion method to obtain an approximate solution and frequency of equation. Parameter-expansion method (PEM) suggested by Ji-Huan He have been proved to be a very effective and useful method for handling nonlinear problems.

Mathematics Subject Classification: Primary 34C15; Secondary 39A11, 81Q15, 34E10.

Keywords: Parameter-expansion method; Rayleigh equation.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Synchronization of the new chaotic system via linear feedback control

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Abstract

This paper presents the linear feedback control laws to synchronize of the new chaotic system described in [Physica A 373 (2009) 3637-3642]. The sufficient conditions for achieving the synchronization of two identical systems are derived based on Lyapunov stability theorem. The proposed controller ensures that the states of the controlled chaotic response system asymptotically synchronizes to the states of the drive system. Finally, numerical simulations are presented to demonstrate the effectiveness of the proposed chaos synchronization scheme.

Mathematics Subject Classification: Primary 74H65; Secondary 37N35, 37N30.

Keywords: Chaotic system; Synchronization; Linear feedback control; Lyapunov stability theorem.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A new characterization of inner product spaces

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Abstract

In this talk we present a new characterization of inner product spaces related to the $p-$angular distance.

Mathematics Subject Classification: 46C15; 46B20; 46C05.

Keywords: inner product space, characterization of inner product spaces, p-angular distance, Dunkl–Williams inequality.

[1]Speaker

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New generalization of some famous integral inequalities for pseudo-integrals

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Abstract

In this paper, we study Jensen and Chebyshev type inequality for pseudo-integrals and prove a Stolarsky type inequality for pseudo-integrals where $g : [0, 1] \to [0, 1]$ is an increasing function and continuous generator of the pseudo-addition $\oplus$ and the pseudo-multiplication $\odot$. More precisely, we show that:

$$\int_{[0,1]}^{\oplus} f(x^{\frac{1}{a+b}})dx \geq (\int_{[0,1]}^{\oplus} f(x^{\frac{1}{a}})dx) \odot (\int_{[0,1]}^{\oplus} f(x^{\frac{1}{b}})dx),$$

where $a, b > 0, f : [0, 1] \to [0, 1]$ is a continuous and strictly decreasing and μ is the Lebesgue measure on $\mathbf{R}$.

Mathematics Subject Classification: 03E72; 26E50; 28E10.

Keywords: Stolarsky inequality, Jensen inequality, Chebyshev inequality, pseudo-integral.

[1]Speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

Numerical solutions to fractional-order heat equations

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Abstract

In this study we investigate the numerical solutions of fractional-order heat equations. According to the Grunwald-Letnikov discretization method, fractional-order derivative is discretized to a difference equation system. Then the result difference scheme is used to achieve some numerical solutions to fractional-order heat equation. The numerical results will be compared to some classical results related to heat equations for efficiency of our method.

Mathematics Subject Classification: 26A33; 35K05; 65M06.

Keywords: fractional differentiation,Fractional-order heat equation

[1]Speaker

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On Products of Characters

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Abstract

Let G be a finite p-group, for some prime p, and , $\psi, \theta \in \mathrm{Irr}(G)$ be irreducible complex characters of G. It has been proved that if, in addition, ψ and θ are faithful characters, then the product $\psi\theta$ is a multiple of an irreducible or it is the nontrivial linear combination of at least $(p+1)/2$ distinct irreducible characters of G. We show that if we do not require the characters to be faithful, then given any integer $k > 0$, we can always find a p-group P and irreducible characters Ψ and Θ of P such that the product$\Psi\Theta$ is the nontrivial combination of exactly k distinct irreducible characters.

Keywords: p-group, characters.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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An Explicit Construction of Einstein Randers Metrics With Non-constant Flag Curvature

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

PERTURBED ITERATIVE ALGORITHM FOR IMPLICIT VARIATIONAL-LIKE INCLUSIONS

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[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Stability of linear time varying delay dynamical systems on time scales and applications to delay control systems

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Abstract

In this article we have considered the stability of delayed linear time varying systems on time scales. Using the Lyapunov function, sufficient delay dependent conditions for the exponential stability are given. The existence of the solution of Riccati equations (RE) and linear matrix inequalities (LMI) guarantee the exponential stability of linear time varying delay systems on time scales. The results are extended to linear time varying delay control systems.

Keywords: Exponential stability, Time scale, Time varying, Matrix inequalities, Lyapunov function, Riccati equation, Delay control system.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Application of Regularization Method for Solving an Inverse Parabolic Problem

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Abstract

his paper deals with estimation of unknown surface heat flux in one dimensional inverse heat conduction problem . The fundamental solution of heat equation, together with prescribed initial and boundary data defined on the domain of problem are used to construct a system of integral equations on the boundary of domain. The discrete approximation of the problem is based on the finite differences method for system of integral equations. The standard Tikhonov regularization technique with the generalized cross-validation (GCV) criterion for choosing regularization parameter.

Mathematics Subject Classification:35R30; 35A08; 35K05; 74S20.

Keywords: Inverse Problem, Regularization Method, Regularization Parameter, Inverse Problem.

[1]Speaker

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$B(H,K)$ as a Hilbert C^*-module

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Abstract

For Hilbert spaces H and K, $B(H,K)$ is a Banach space but it is not a Hilbert space. In the present paper we consider $B(H,K)$ as a Hilbert $B(K)$-module and study some properties about operators on this especial space.

Mathematics Subject Classification: 46L08; 46B28; 46C50.

Keywords: Hilbert C^*-module, Adjointable operator, Positive operator.

[1] Speaker

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Inverse spectral analysis for the Sturm-Liouville equation with spectral parameter in the boundary conditions

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Abstract

In this paper, we study Sturm-Liouville problems with spectral parameter linearly contained in one of the boundary conditions. We give uniqueness theorem for the solution of the inverse problem according to the spectral data. Then, we recover the potential function and coefficients of boundary conditions from the spectral data.

Mathematics Subject Classification: 34B24; 34A55; 34L05.

Keywords: Sturm-Liouville, Inverse problems, Spectral parameter, Eigenvalue.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Using Buchberger's Criteria For Computing Computing comprehensive Grobner Bases

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical solution of differential equations by neural network

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Abstract

In this paper, a novel hybrid method based on optimization techniques and neural networks method for the approximate solution of differential equations(DEs), is presented.

Mathematics Subject Classification:

Keywords: bernoulli differential equations; neural network; Feedforward artifical neural network.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A priori error estimate for SD-Methods of a Strongly Damped Wave Equation

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Abstract

We return to earlier work in Thomee and Wahlbin, BIT Numer. Math. **44** (2004), concerning to finite element method for a strongly damped wave equation and finding maximum norm estimates. In the present work, we use streamline diffusion methods (SD) as spatial discretization. Therefore, the regularity requirements on the a priori error estimation is computed.

Mathematics Subject Classification: 65M15; 65N12, 65N30.

Keywords: Streamline diffusion methods, strongly damped wave equations, a priori error estimate, finite element.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On approximate additive–quartic and quadratic–cubic functional equations in two variables in non-Archimedean spaces

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Abstract

We establish the generalized Hyers-Ulam stability of the additive-quartic and quadratic-cubic mappings with two variables in non–Archimedean spaces.

Mathematics Subject Classification: 39B82, 39B52.

Keywords: Hyers–Ulam–Rassias stability, quadratic functional equation, cubic functional equation, quartic functional equation, quintic functional equation, Non-Archimedean space.

[1] speaker

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On the non-riemanian aspects of projective finsler geometry

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[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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The Properties of autocentral series of abelian groups

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Abstract

In the present paper we introduce the lower autocentral series of autocommutator subgroups of a given group. Using our previous work in 2010, it is shown that every finite abelian group is isomorphic with n^{th}-term of the lower autcentral series of some finite abelian group.

Mathematics Subject Classification: 20D45, 20D25; 20E34, 20E36, 20K10.

Keywords: Autocentral series, autocommutator subgroup, Sylow subgroups, abelian group.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A New Algorithm for Computing Sagbi-Grobner Bases

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Abstract of 41st Annual Iranian Mathematics Conference
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Cyclic S-posets satisfying Condition (E')

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Abstract

Condition (E') of right posets was defined by Rezaei in 2009(see[4]). In this paper, we discuss Condition (E') of one element and cyclic S-posets.

Mathematics Subject Classification: Primary 00X00, Secondary 00X00, 00X00.

Keywords: Cyclic S-poset, Condition (E'), Left po-collapsible.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Linear maps preserving the set of Fredholm operators and essential spectral radius

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Abstract

Let H be an infinite-dimensional separable complex Hilbert space and $\mathcal{B}(H)$ the algebra of all bounded linear operators on H. In this paper we characterize surjective linear maps $F : \mathcal{B}(H) \to \mathcal{B}(H)$ preserving the set of Fredholm operators in both directions. As an application we prove that ϕ preserves the essential spectrum if and only if the ideal of all compact operators is invariant under ϕ and the induced linear map φ on the Calkin algebra is either an automorphism, or an anti-automorphism. Moreover, linear maps from $\mathcal{B}(H)$ onto itself preserve the essential spectral radius.

Mathematics Subject Classification: Primary 41A58, 42C15.

Keywords: linear preservers, Fredholm operators,Calkin algebra

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On Fréchet Frames

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Abstract

In this paper, the concept of frame for Fréchet spaces will be introduced and some of its properties will be investigated. Also invariance of this kind of frames under perturbation will be shown.

Mathematics Subject Classification: 42C15, 42C20, 46A13, 46A45.

Keywords: Banach frame, Fréchet frame, pre-Fréchet frame.

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Using Block pulse functions for solving integral equations with time delay

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Abstract

This article proposes a simple efficient method for solving integral equations with time delay. By using block pulse functions and their operational matrix of integration, integral equation can be reduced to a linear lower triangular system which can be directly solved by forward substitution. Numerical examples show that the approximate solutions have a good degree of accuracy.

Mathematics Subject Classification: 45D05, 45B05, 45D99.

Keywords: Block pulse functions, Operational matrix, Integral equations with time delay, Delay operational matrix.

[1]speaker

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The Chinese remainder, Going up and lying over theorems in Basic logic algebras

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Abstract

In this paper, by considering the notion of residuated lattice and BL algebra, we concern a relationship between the important theorems in commutative algebra and BL-algebra theory.

Mathematics Subject Classification: Primary 03G25,13B24,13B30,06D35.

Keywords: residuated lattice, BL-algebra, MV-algebra, Going up theorem.

[1]Speaker

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reconstruction of a jacobi matrix from mixed eigendata

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Abstract

In this paper we consider the construction of a $n \times n$ jacobi matrix J of the form

$$J = \begin{pmatrix} J_1 & b_k e_k e_1^T \\ b_k e_k^T e_1 & J_2 \end{pmatrix}$$

from mixed eigendata $\lambda_1, \mu_1, \mu_2 \in \Re, X = (x_1, x_2, ..., x_n) \in \Re^n, Y_1 = (y_1, y_2, ..., y_k) \in \Re^k, Y_2 = (y_{k+1}, y_{k+2}, ..., y_n) \in \Re^{n-k}$such that $X = \lambda CX, J_i = \mu_i C_i Y_i, i = 1, 2$, where C is a given jacobi matrix. Here $0 < k < n$ and J_1, J_2 are $k \times k$ and $(n-k) \times (n-k)$ square matrices, respectively. Indeed We consider a generalized inverse eigenvalue problem of the form $Ju = \lambda Cu$.

Mathematics Subject Classification: 65F15, 65H15.
Keywords: Jacobi matrix;Eigenvectors;Inverse eigenvalue problem.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On a Class of Analytic Functions Defined by Gaussian Hypergeometric Function

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Abstract

In this paper by making us of Gaussian hypergeometric function a new class of analytic univalent functions in the unit disc $U = \{z; \mid z \mid < 1\}$ is defined. some results about this class are obtained.

Mathematics Subject Classification: Primary 30C45; Secondary 30C45, 30C45.

Keywords: Univalent function, starlike function, convex function, Gaussian hypergeometric function.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

finite element method and surface elliptic equations

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F. Akbarifard

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Abstract

In this study we consider a new finite element method for discretization of elliptic equations on surfaces. The idea of this approach is to use finite element spaces that are induced by triangulations of an outer domain to discretize the partial differential equations (PDE) on surface. It has been shown that the method has optimal order of convergence both in the H^1- and L^2-norm.

Mathematics Subject Classification: 65N30, 65N12, 65N15.
Keywords: Finite element, Convergence, Error bounds.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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THE NEIMARK-SACKER BIFURCATION AND ITS DYNAMICAL ECONOMIC MODEL

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Abstract

The paper describes the Hick Samuelson Keynes dy- namical economic model with discrete time and consumer senti- ment. We seek to demonstrate that consumer sentiment may cre- ate uctuations in the economical activities. The model possesses a Neimark-Sacker bifurcation .

Variational problems, Euler-lagrange equation

Abstract of 41st Annual Iranian Mathematics Conference
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On frame Wavelet Sets for $L^2(\hat{G}) \oplus L^2(\hat{G})$

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Fridoun Moradlou

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Abstract

For a locally compact abelian ordered group G, we introduce frame wavelet sets on the Pontryagin dual $\hat{G}$ of G. This is done systematically by a set of group isomorphisms that induces some equivalence relations on $\hat{G}$, which determine required Haar measurable subsets of $\hat{G}$.

Mathematics Subject Classification: 46N99, 46B28, 11K70.
Keywords: frame,wavelet,wavelet set.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Colon of Varieties in the semimodule $\zeta(M)$

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Abstract

Throughout, unless otherwise stated, all rings are commutative rings and all modules are unitary. In this work, the colon $(V(K) : V(N))$ in the $\zeta(R)-$space $\zeta(M)$ is considered, when K and N are submodules of an $R-$module M. In particular for a submodule N of M, It is shown that, if $(N : M)$ is a prime (resp. primary) ideal of R , then $(V(N) : V(M))$ is a prime (resp. primary) ideal of $\zeta(R)$. The reverse containment holds, when M is finitely generated or a multiplication module.

Mathematics Subject Classification: Primary 13C05,13C13; Secondary 54B99.

Keywords: Multiplication module, radical submodule, Prime submodule.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Killing form of lie algebras

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Abstract

In this paper, we study ad(adjoint) and kiling forms. we consider properties of kiling form and use some results of it and present example for kiling form. At end, we prove theorems of kiling form and adjoint

Keywords: kilking form, lie algebra, bilinear form.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Generalizations of symmetrics spaces

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[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Computation of exact inertia of large sparse symmetric matrix

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Abstract

If A is a symmetric matrix then the Sylvester law of inertia provides us with diagonal pivoting factorization for compute the inertia of A. in the case that A is a large and sparse matrix; this factorization is not useful (see $[1-2]$). In this paper we develop an algorithm based on Krylov subspace method for computing the exact inertia of a real symmetric matrix without computing the eigenvalues. The implementation of the final algorithm has been tested by numerical examples, the results show that the algorithm converges fast and works accurately.

Mathematics Subject Classification: Primary 65L15; Secondary 65F15, 65F50.

Keywords: Inertia-Krylov-exact-symmetric.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

beta exponentiated Weibull Distribution and its application

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R. Lalehzari

Abstract

In this paper, we introduce the beta exponentiated Weibull distribution for which the exponentiated Weibull is a special case. Various properties of the new distribution are discussed. The density function can be expressed as a mixture of the exponentiated Weibull densities. Some mathematical properties of the new distribution is obtained in terms of the corresponding properties of the exponentiated Weibull distribution. We obtain expressions for the density, mgf and moments. Estimation of the parameters is derived using the method of maximum likelihood. Simulation study is given.

Keywords: exponentiated Weibull; hazard function; maximum likelihood.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Constructing Strictly Inductive limits in Locally convex cones

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Abstract

We introduce a way of constructing strictly inductive limits in locally convex cones. By this definition, we prove that the strict inductive limit of a sequence of locally convex cones with the strict separation property has the same strict separation property. Also we establish that the strict inductive limit of a sequences of separated cones is separated too. Finally we verify barreledness for this strict inductive limit.

Mathematics Subject Classification: Primary 46A03; Secondary 46A08, 46A13.

Keywords: locally convex cone, convex quasiuniform structure, inductive limit.

Abstract of 41st Annual Iranian Mathematics Conference
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APPLICATION OF DIFFERENTIAL TRANSFORM METHOD TO ABEL'S INTEGRAL EQUATIONS

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Abstract

A method for solving Abel's integral Equations is given by using the differential transform method. The approximate solution is calculated in the form of a series with easily computable terms and also the exact solutions can be achieved by the known forms of the series solutions. Several examples are given to demonstrate the reliability and the performance of the presented method.

Keywords: Abel's integral, Volterra integral equation, differential transform.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Explicit solution of the polynomial least squares approximation problem on modified Chebyshev exterma nodes

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Abstract

In this paper, obtaining explicit solution of polynomial least squares approximation on modified Chebyshev exterma[2]nodes is done. We also show that the inverse of normal matrix on this set of nodes can be represented as the sum of two symmetric matrices: a full rank matrices which admits a Cholesky factorization and a 2-rank matrix. Some Numerical examples will be presented to illustrate efficiency of the proposed method.

Mathematics Subject Classification: Primary 41A10; Secondary 11Y05, 05A19.

Keywords: Polynomial Approximation; Cholesky Factorization; Combinatorial Identities.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the existence of homoclinic orbits for generalized Liénard systems

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V. ROOMI[1]

Abstract

In this work we study the existence of homoclinic orbits of the planer system of Liénard type $\dot{x} = h(y - F(x))$ and $doty = -g(x)$ where h is strictly increasing and $h(\pm\infty) = \pm\infty$. We present sufficient and necessary conditions for this system to have homoclinic orbits. The conditions obtained are very sharp.

Mathematics Subject Classification: 37C29, 34A12.
Keywords: Homoclinic orbit, Liénard system.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A numerical study of extraction well equation

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A. Shidfar

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Abstract

In this study, the groundwater flow will be considered. A nonlinear diffusion equation is investigated numerically in a single injection-extraction well.

Mathematics Subject Classification: 35K20, 35K61, 76S99.
Keywords: extraction well, nonlinear diffusion equation, numerical solution, Adomian-decomposition method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ELMRES for Solving Ill-posed Linear System of Equations

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Abstract

tiny The solution of large linear discrete ill-posed problem $Ax = b$ where A and b are contaminated by noise, by iterative methods has recently received considerable attention. Due to the severe ill-conditioning of A and b, the meaningful solution of this equation is not yield, obviously. Regularization is the best way to avoid this problem. Tikhonov regularization minimizes a least-square problem instead of solving the original system that is less sensitive to perturbations. Here we apply Tikhonov regularization to solve ill-posed problems by ELMRES method. Future discussions and numerical example will certified the efficiency of Tikhonov for solving this kind of problems.

Mathematics Subject Classification: Primary 65-XX, Secondary 65Fxx , 65F10.

Keywords: Tikhonov regularization, ELMRES, GMRES, Least square problem.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Variation of induced linear operators

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Rasool Khalilzadeh

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Abstract

Let V be an n-dimensional inner product space and G be a subgroup of the symmetric group S_m. Let λ be an irreducible character of G, and let $V_\lambda(G)$ be the symmetry class of tensors associated with λ. Let A be a linear operator on V and let $K_\lambda(A)$ be the operator it induces on $V_\lambda(G)$. We obtain an upper bound and a lower bound for the norm of the derivative of the map $A \to K_\lambda(A)$. This leads to a bound for the distance between the induced operators of two operators. Also we obtain the norm of this map exactly, when λ is the principal character of G. This problem have been studied for case $G = S_m$ in [2, 3].

Mathematics Subject Classification: Primary 15A69, Secondary 20C15, 47A60.

Keywords: Symmetry class of tensors, Induced linear operator, Derivative, Norm.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

NUMERICAL SOLUTIOS OF THE SECOND-ORDER PARTIAL DIFFERENTIAL EQUATIONS OF ELLIPTIC TYPE BE USING HPM QND GREENS FUNCTION

H.Mohebbi

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[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The continuous Galerkin method for the wave equation with optimal a priori error estimates and minimal regularity assumption

Fardin Saedpanah

Abstract

The classical wave equation on a bounded convex domain is considered. Then a continuous Galerkin method, based on piecewise linear polynomials both in space and time, is applied, and stability estimates for a slightly more general problem are obtained. These are then used to prove optimal order a priori error estimates with minimal regularity assumptions on the solution.

Mathematics Subject Classification: 65M60, 65M15.
Keywords: finite element, continuous Galerkin, wave equation, stability, a priori error estimate.

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12-15 September 2010, University of Urmia, Urmia-Iran

A 2-LOCAL CHARACTERIZATION OF $M(24)'$

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Abstract

The group $M(24)'$ has been characterized by the structure of a non 2-central involution in [**?**] with a further assumption. In [**?**], they have assumed that the composition factors of the centralizer of a 2-central involution in G are from among the known finite simple groups. In this paper we do not have this assumption and we have used of [**?**] to determine the structure of the centralizer of a 2-central involution in the group G. Further for identifying the group M_{24}, they have used of [**?**] and here we have identified the group M_{24}.

Mathematics Subject Classification: 20D08.
Keywords: Finite Simple groups, Finite Groups.

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12-15 September 2010, University of Urmia, Urmia-Iran

The index complex of maximal subalgebras in finite dimensional Lie algebras

Ali Reza Salemkar

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Abstract

Let M be a maximal subalgebra of a finite dimensional Lie algebra L. A subalgebra C of L is said to be a completion of M in L if C is not contained in M but every proper subalgebra of C which is an ideal of L, is contained in M. The set $I(M)$ of all completions of M is called the index complex of M in L. This is analogous to the concept of the index complex of a maximal subgroup of a finite group, which has been studied by a number of authors. We use this concept to study the influence of the maximal subalgebras on the structure of a finite dimensional Lie algebra. In particular, we give some characterizations of solvable and supersolvable Lie algebras.

Mathematics Subject Classification: 17B05, 17B20, 17B30, 17B50.
Keywords: Lie algebras, index complex, solvable, supersovable.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Note on the Symmetric Hit Problem

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Abstract

The symmetric hit problem was introduced for the first time by the author in his thesis. The aim of this talk is to solve an important open problem posed in the thesis, in an special case, which is one of the fundamental results in the studies of the symmetric hit problem.

Mathematics Subject Classification: 55S10.

Keywords: Steenrod algebra, hit problem, symmetric hit problem.

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Numerical solution to Nonlinear Diffusion Problem

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Abstract

In this paper, the author considers a nonlinear diffusion problem of Gases in a Reservoir, i.e., a nonlinear diffusion equation with initial and boundary condition. A scheme for the discretization in time of that problem is proposed. The stability and the convergence of the scheme are proved.

Mathematics Subject Classification: Primary 65M06, 65M12.

Keywords: Numerical Solution - Nonlinear Diffusion Problem - Gas Reservoir - New finite difference method.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the high rank of θ-congruent number elliptic curves

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Abstract

In this talk, we use the Mestre's conditional upper bound for the Mordell-Weil rank of elliptic curves to improve the authors' results on high rank θ-congruent number elliptic curve over rational field for $\theta = \pi/2, \pi/3$, and $2\pi/3$.

Mathematics Subject Classification: Primary 11G05; Secondary 14H52.

Keywords: θ-congruent number, elliptic curve, Mordell-Weil rank.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Stock Option Pricing and Inverse Finance Problem

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Abstract

In this paper, the inverse problem of determining the stock option pricing is discussed. For this important, we describe the general formalism and derive the exact distribution of prices and stock option. Also we discuss and solve the inverse problem in financial mathematics. Finally we will present a relatively fast algorithm for solving the inverse problem in finance which determine the volatility function and give some numerical examples.

Keywords: Financial Mathematics, Inverse finance Problem, PDE.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Note On Total Restrained Domaination In Graphs

M. Ali Soleimani Delarstaghi

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A New Way to Estimate the Unknown Coefficient in Parabolic PDEs of Special Structure

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Abstract

Finding the capacity of heat transferring in a non-homogenous bar is a big challenge in applied sciences. Here, we study the determination of an unknown spacewise-dependent coefficient in a parabolic partial differential equation by considering the inverse problem and adding an additional initial condition.

Mathematics Subject Classification: Primary 35C05; Secondary 35Q80.

Keywords: Parabolic PDE, Fixed Point Method, Inverse Problem.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON THE STABILITY OF THE QUATIC FUNCTIONAL EQUATION

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Iran.

M. SOLEIMANIA[1]

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Iran.

Abstract

In this paper, we establish the Hyers-Ulam-rassias stability of the functional equation $f(kx+y)+f(kx-y)=k^2[f(x+y)+f(x-y)]+2k^2(k^2-1)f(x)-2(k^2-1)f(y)$, which $k\in\mathbb{N}$ is fixed. The generalized Hyers-Ulam stability originated from the Th.M.Rassias stability theorem that appeared in his paper [Th.M.Rassias, On the stability of the linear mapping in Banach spaces Proc. Amer. Soc.72(1978)297-300].

Mathematics Subject Classification: 39X82, 39X52, 39X52.
Keywords: Hyers-Ulam-rassias stability.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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NUMERICAL SOLUTION OF TWO-DIMENSIONAL INTERGRAL EQUATIONS USING HAAR WAVELETS

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URMIA UNIVERSITY

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Risk analysis of nonnested models under incomplete data

Abdolreza Sayyareh

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Abstract

We are interested in quantifying a difference of risks between two models on a particular set of information. We propose a normalization of a difference of estimators for estimating the difference of expected Kullback-Leibler risks between maximum likelihood estimators of the distribution in two different models when the data are incomplete. We wish to assess the risk incurred on a particular set of information. We constructed an interval which contains the true difference of expected Kullback-Leibler risks with a prespecified probability in situation under which the data is incomplete.

Keywords: AIC, Kullback-Leibler risk, Model selection.

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Modified multiple criteria approach to data envelopment analysis

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Mozhgan Mansouri Kaleybar

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Abstract

This paper, presents a multiple criteria data envelopment analysis (MCDEA) model which can be used to compute input and output weights with out a priori information about the weights. Here a new model proposed for computing weights with out zero value. In order to do this "Assurance region method" is used.

Keywords: Assurance Region Method (AR), Data Envelopment Analysis (DEA), Multiple Criteria (MC), Zero Weights

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Concerning the Smith Form of Matrix Polynomials for Solution of Nonlinear Systems of Integral Equations

N. Shayanfar[1]

M. Hadizadeh

Abstract

In this paper, a reliable method for the nonlinear mixed type system of integral equations is constructed based on the properties of matrix polynomials. Choosing the variable of the matrix polynomial, an equivalence relation between system of integral equations and matrix polynomial equation is given. Using the Smith decomposition form, leads to the final solution of the mixed system.

Mathematics Subject Classification: 15A21; 47G10; 45F05.
Keywords: Matrix polynomial, Matrix multivariable polynomial, Smith form, System of nonlinear integral equations .

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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APPROXIMATE CONNES-AMENABILTY OF DUAL BANACH ALGEBRAS

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Abstract

We introduce the notions of approximate Connes - amenability and approximate strong Connes-amenability for dual Banach algebras. Then we characterize these two types of dual Banach algebras in terms of approximate normal virtual diagonals and approximate $\sigma WC-$virtual diagonals.

We show by means of an example that the class of approximately Connes ameanble Banach algebras properly contains the class of Connes-ameanble Banach algebras. Moreover cases where approximate Connes-amenability of $\mathcal{A}^{**}$ implies approximate Connes-amenability or approximate amenability of $\mathcal{A}$ are also discussed.

Mathematics Subject Classification: Primary 46H25, 46H20, Secondary 46H35.

Keywords: Approximately inner derivation, Approximately Connes amenable, Approximately strongly Connes amenable, Approximate normal virtual diagonal, Approximate $\sigma WC-$virtual diagonal.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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F-Permutations Matrices

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Department of Mathematics, Mahani Mathematical Research Center, Shahid Bahonar University of Kerman, Kerman, I.R.Iran.

Abstract

In this paper, the concept of F-permutation is introduced. Then by applying this notion, we give a presentation of an F-permutation by F-permutation matrices. We show that, there is a one-to-one corresponding between all F-permutations on n-letters and all F-permutation matrices.

Mathematics Subject Classification: 20N25, 08A72.
Keywords: fuzzy permutation matrices

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Golden Geometry

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Abstract

A research on the properties of the Golden structure (i.e. a polynomial structure with the structure polynomial $Q(X) = X^2 - X - 1$) is carried out in this seminar. The geometry of the Golden structure on a manifold is investigated by using a corresponding almost product structure.

Keywords: Golden ratio, Differential manifold, Tensor field, Polynomial structure.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Artin Exponent of Some Rational Groups

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Abstract of 41st Annual Iranian Mathematics Conference
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A note on the symplectic embedding of skinny ellipsoids into balls

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Abstract

In this talk we investigate conditions under which we can generalize the results on symplectic embeddings of ellipsoids into balls in dimension 4, to an arbitrary dimension.

Mathematics Subject Classification: 53C15,58Axx.
Keywords: Symplectic embedding, symplectic capacity, embedding obstruction.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solving fractional integro-differential equations by the haar wavelet method

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Abstract

In this paper, we propose the Haar wavelet method for the numerical solution of fractional integro-differential equations of volterra type(FIDE). For this purpose, we also use collocation method and obtain a system of linear equations.

Mathematics Subject Classification: 34K37, 65T60.
Keywords: Haar wavelet, Fractional integro-differential equation, Scaling function, Collocation method

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Double centralizer on Banach spaces

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S.Ostadbashi

Abstract

Mathematics Subject Classification: 05B35.
Keywords: REal Banach space, Double centralizer, Stability, Cocircuit, Support of a vector.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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RIF_P- NS preconditioner for nonsymmetric positive definite matrices

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Leila Moghadam

Payam Noor University, Khoy Branch

Abstract

In this paper a new ILU factorization preconditioner for solving large linear systems by iterative methods is presented. The factorization which is based on A- birothogonalization process is well defined for a general positive definite matrix. Numerical experiments illustrating the performance of the preconditioner are presented. A comparison with the well known preconditioner RIF_p of Benzi and Tuma is also included.

Mathematics Subject Classification: 65F10.

Keywords: Implicit Preconditioner, Sparse matrices, RIF, RIF_p

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A second order differential equation in Banach spaces

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Abstract

In this paper, our purpose is study of existence, uniqueness and maximal regularity of strict solutions of a specific second order differential equation in Banach spaces.

Mathematics Subject Classification: 34A25.
Keywords: Banach Spaces, Second order differential equations.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Generalization of the SOR Method

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Abstract

In this paper, a generalization of the successive overrelaxation (SOR) method is presented and its convergence properties are discussed. Some numerical experiments are given to show the efficiency of the proposed method.

Mathematics Subject Classification: Primary 65F10.

Keywords: SOR, Generalized SOR, M-matrix, Convergence.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The infinite product representation of solutions of indefinite Sturm-Liouville problems with three turning points

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Abstract

We study the infinite product representation of solutions of second order differential equation of Sturm-Liouville type on a finite interval having three turning points under the assumption that the turning points are types IV, II, III , respectively. Such representations are useful in the associated studies of inverse spectral problems for such equations.

Mathematics Subject Classification: Primary 34E20, Secondary 34E05, 34B24, 34B09.

Keywords: Turning point, Sturm-Liouville, Nondefinite problem, Infinite products, Hadamard Factorization Theorem, Spectral theory

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON MOUFANG HYPERIDENTITIES

Kh. Shahbazpour

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Abstract

In this paper we will investigate Moufang loops and identities that define this loops. Then we will consider one of these identities and discuss hyperidentities that satisfy in variety of Moufang loops.

Mathematics Subject Classification: Primary 20N05, Secondary 05C25.

Keywords: Moufang Loops, Hyperidentities, Second Order Logic.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical solution of the Sturm-Liouville problem by using Chebyshev cardinal functions

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B. Nemati Saray

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Abstract

In this paper, we want to compute the eigenvalues of Sturm-Liouville problem with the boundary conditions by using cardinal Chebyshev functions.

Mathematics Subject Classification: 34B24, 41A50.
Keywords: Sturm-Liouville problem, Chebyshev cardinal.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On submodule-based zero-divisor graph of a module over a commutative ring

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M. Nazari

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Abstract

The zero-divisor graph $\Gamma(R)$ of a commutative ring with identity R has been generalized from some viewpoints. One of these is the ideal-based zero divisor graph $\Gamma_I(R)$ by replacing an arbitrary ideal I of R instead of the zero ideal. Also the another of them are the zero divisor graphs $\Gamma_*(M))$, $\Gamma(M)$ and $\Gamma^*(M)$ of an R-module M instead of R. We define the submodule-based zero-divisor graph by mixing both of them. For a submodule N of an R-module M we show that $diam\Gamma_{*N}(M) \leq 3$ and $gr(\Gamma_{*N}(M)) \leq 4$, if it contains a cycle.

Mathematics Subject Classification: Primary 13A99, Secondary 05C25, 13C99.

Keywords: Submodule based zero-divisor graph, diameter, girth, cut-point

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solving a Class of Nonlinear Optimal Control Problems via A Modified Variational Iteration Method

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Sohrab Effati

Abstract

This paper presents an analytical approximate solution for nonlinear quadratic Optimal Control Problems (OCP's). The proposed method consists of a modified Variational Iteration Method (VIM), for solving the extreme conditions obtained from the OCP. An illustrative example is given to demonstrate the simplicity and efficiency of the proposed method.

Mathematics Subject Classification: 49M05

Keywords: Optimal control problem, Variational iteration method, Shooting method

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Homotopy Analysis Method for Solving Variational problems

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Mashhad, Iran.

Abstract

In this paper, homotopy analysis method (HAM) will be employed for solving some problems in calculus of variations. Numerical results reveal that HAM is very effective and simple for obtaining approximate solutions to variational problems.

Keywords: Homotopy analysis method, Calculus of variation, Variational problems, Euler-lagrange equation

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Structure of H-Spaces

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Abstract

A pair (X, A) of a topological space X and a topological ring A is called an H-space, if for each closed subset F of X and $x \notin F$, there exists $f \in C_A(X)$ such that $f(x) \neq o_A$ and $F \subseteq Z(f)$ and a topological space X is called a V-space, [4], if for points a, b, c, and d of X, where $a \neq b$, there exists a continuous functions f of X into itself such that $f(a) = c$ and $f(b) = d$. In this paper we investigate some properties of H-spaces. In addition to , we show that every H-space is not a V-space.

Mathematics Subject Classification: 54C10.
Keywords: H-space, V-space, Hausdroff space.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Results of generalized local cohomology modules of $\mathfrak{a}$-minimax modules

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Abstract

Let R be a commutative Noetherian ring, M a finitely generated R-module, and N a minimax R-module. It is shown that if $\mathfrak{a}$ is an ideal of R such that the cohomological dimension $\mathrm{cd}(\mathfrak{a}) = 1$, then $H^j_{\mathfrak{a}}(M, N)$ and $\mathrm{Ext}^i_R(M, H^j_{\mathfrak{a}}(N))$ are $\mathfrak{a}$-cominimax for all i, j. Furthermore, if t is a non-negative integer such that $H^j_{\mathfrak{a}}(M, N)$ is $\mathfrak{a}$-minimax for all $j < t$, then for any $\mathfrak{a}$-minimax R-submodule L of $H^t_{\mathfrak{a}}(M, N)$, the R-module $\mathrm{Hom}_R(R/\mathfrak{a}, H^t_{\mathfrak{a}}(M, N)/L)$ is $\mathfrak{a}$-minimax. As a consequence, it follows that the Goldie dimension of $H^t_{\mathfrak{a}}(M, N)/L$ is finite, and so the associated primes of $H^t_{\mathfrak{a}}(M, N)/L$ is finite

Mathematics Subject Classification: 13D45, 13E99.
Keywords: Generalized local cohomology module, minimax module.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A representation of selfadjoint module maps

K. Sharifi[1]

Abstract

We will find a representation of selfadjoint C*-linear module maps into positive, negative and zero parts via the operators which are appear in the polar decomposition of them. This enables us to study those orthogonal submodules which are reduced by selfadjoint C*-linear module maps.

Mathematics Subject Classification: 46L08, 47A05, 47L60, 46C05

Keywords: Hilbert C*-modules, unbounded operators, polar decomposition, C*-algebras of compact operators.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

About Edge-Tenacity of a Graph

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Engineering, University of Tehran P.O. Box 14395-195,
Tehran, Iran.

Abstract

In this paper we introduce a new invariant edge-tenacity, for graphs. it is another vulnerability measure. we present several properties and bounds on the edge-tenacity. we also compute the edge-tenacity of some classes of graphs.

Mathematics Subject Classification: 05C45, 90B10, 68R10.
Keywords: cut set ,tenacity, network vulnerability.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Quadrature formulae of Gauss type based on Euler identities compare with Legendre

Sara Saboori

Islamic Azad University, Lahijan Branch, Lahijan, Iran.

Abstract

The aim of this paper is to derive quadrature formulae of Gauss type based on Euler identities and compare between the Gauss 2-point formula obtained by Euler identities and Legendre 2-point formulae.

Mathematics Subject Classification: 41A55, 41X00.
Keywords: Quadrature formulae, Euler identities, Gauss type.

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Numerical solution of Schrödinger equation by using modified variational iteration and homotopy analysis methods

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Abstract

In this paper, a Schrödinger equation is solved by using the variational iteration method (VIM), modified variational iteration method (MVIM) and homotopy analysis method (HAM). The approximate solution of this equation is calculated in the form of series which its components are computed by applying a recursive relation. The existence and uniqueness of the solution and the convergence of the proposed methods are proved. A numerical example is studied to demonstrate the accuracy of the presented methods.

Mathematics Subject Classification: Primary 00X00, Secondary 00X00, 00X00.

Keywords: Schrödinger equation, Variational iteration method , Modified variational iteration method , Homotopy analysis method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Groups with marginal automorphisms as elementary abelian groups

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H. Safa[1]

Abstract

Let W be a non-empty subset of a free group. The automorphism α of a group G is said to be a marginal automorphism, if for all $x \in G$, $x^{-1}\alpha(x) \in W^*(G)$, where $W^*(G)$ is the marginal subgroup of G.

In this paper, we give necessary and sufficient condition for a purely non-abelian p-group G, such that the set of all marginal automorphisms of G, form an elementary abelian p-group.

Mathematics Subject Classification: 20D45, 20F28, 20E05, 20E36.
Keywords: Elementary abelian p-group, marginal automorphism, marginal subgroup, purely non-abelian group, verbal subgroup.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Approximate solution for the KGS equation By RBF in a finite-Difference mode

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Abstract

In this paper, we present an numerical method for approximate solution of the coupled Klein-Gordon-Schrodinger equations using radial basis functions. For this aim, we apply an alternative RBF based formulation which generate a local interpolant using scattered data RBF interpolant method. In this method, function derivatives are approximated as a linear combination of the function values.

Mathematics Subject Classification: 41A21, 41A30, 41A63.
Keywords: Klein-Gordon-Schrödinger equation, Radial basis functions, Finite difference method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON LEFT DERIVATIONS OF TRIANGULAR MATRIX RINGS

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Abstract

Let R, S be rings with identity and M be an $(R,S)-$ bimodule. In this paper we determine the structure of left derivations and Jordan left derivations of the triangular matrix ring $T = \begin{pmatrix} \mathrm{R} & \mathrm{M} \\ 0 & \mathrm{S} \end{pmatrix}$.

Mathematics Subject Classification: 16W25, 16N60, 16U80.
Keywords: Left derivation, Jordan left derivation, triangular matrix ring.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A relation between preorderability and orderability of topological spaces and some it's results

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Abstract

In this paper we studies the quotient maps that their domains are the preorder topologic spaces and we obtain some results in this concepts.

Mathematics Subject Classification: 54F05, 06A05.
Keywords: Totally preordered sets, Topological spaces, Order and preorder topology, Quotient spaces.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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PRESERVING POWER GEOMETRIC MEAN TO PRESERVING RANK ONE OPERATORS ON B(H)$_+$

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A.SANAMI[1]

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Abstract

Let φ is a unital bijective mapping on $B(H)_+$ that preserve the power geometric mean for some α, $(0 < \alpha < 1)$, then we conclude that φ preserves rank-one projections bidirectionally.

Keywords: Power geometric mean, rank one operator.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the positive and negative solutions of p-Laplacian BVP with Neumann boundary conditions

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J.Mohammadpour

M.Zameni[1]

Abstract

In this paper, we consider the following Neumann boundary value problem

$$\begin{cases} -(\varphi_p(u'(x)))' = u(x)|u(x)|^p - \lambda|u(x)|^q, & x \in (0,1), \\ u'(0) = 0 = u'(1), \end{cases}$$

where $\lambda \in \mathbb{R}$, p and q are parameters such that $p \in (1,\infty)$, $q \in (0,\infty)$ and $p > q$. We study the positive and negative solutions of this problem, by using a quadrature method, we obtain our results.

Mathematics Subject Classification: 34B15, 34B18.

Keywords: Positive and negative solutions, Interior critical points.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Some Results on the N-Ary Algebraic Hyperstructures

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Yasooj, Iran.

Mathematics Subject Classification:08A05, 20N15, 20N20.
Keywords: Hyper structures, hyper group, multi algebra, Fundamental algebra

Abstract of 41st Annual Iranian Mathematics Conference
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Enveloping actions of partial actions on C^*-algebras

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Abstract

Let G be a countable discrete group and α be a partial action of G on a locally compact space. We describe the enveloping action and the enveloping space of α. Also, if α is an action of G on a C^*-algebra, we will introduce its enveloping action and its enveloping C^*-algebra, if exist.

Mathematics Subject Classification: 46L05.

Keywords: Action of groups, C^*-algebras, homeomorphisms.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

chain conditions on a class of submodules

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Abstract

Let R be a ring and M a right R–module. Here we show that M satisfies acc on F-small submodules iff $Rad(M)$ is noetherian. It is also shown that if M satisfies acc on F-small submodules, then M has property P^* iff M is F-lifting.

Mathematics Subject Classification: Primary 16D70, Secondary 16D80, 16D90.

Keywords: F-small submodule, F-supplement submodule, F-lifting module.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Using radial basic functions for solving integral equations by meshless-type method

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Abstract

In this paper, we develop a new method using radial basic function (RBF)is presented for solving integral equation of Fredholm and Volterra types. The idea is to first produce a uniform mesh in a three dimensional domain and then equi-distribute the mesh in the three coordinate direction. The generated mesh points are suitable for meshless-type methods which only need some scattered points rather than a mesh with smoothness properties.

Mathematics Subject Classification: 65R20, 11Y05, 05A19.
Keywords: Radial basic function, Integral equation, Adaptive mesh, Equi-distribution, collocation meshless method.

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12-15 September 2010, University of Urmia, Urmia-Iran

Approximation of the Inverse Continuous Frame Operator

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of Sabzevar, Sabzevar, Iran

Abstract

A discrete frame in a separable Hilbert space $\mathcal{H}$ allows every element in $\mathcal{H}$ can be written as a infinite linear combination of the frame elements, with coefficients called frame coefficients. Peter G. Casazza and Ole Christensen introduced some methods to approximate frame coefficients. In this article, we investigate some of these results for a continuous frame. As a consequence, approximation of the solution to a moment problem is also discussed.

Mathematics Subject Classification: 42C15, 41A35.
Keywords: Frames, continuous frame, operator frame.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Fuzzy Coprimary Submodules

J. A'zami[1]

N. Zamani

Abstract

Let R be a commutative ring with non-zero identity and M a non-zero unitary R-module. This paper deals with the concept of fuzzy coprimary submodules. We define this notion and study some of its basic results. The behavior of this concept with fuzzy localization will be studied.

Mathematics Subject Classification: 08A72.
Keywords: fuzzy coprimary submodules, fuzzy attached primes, fuzzy prime and primary ideals and submodules.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

C^1-PERSISTENTLY SENSITIVE HOMOCLINIC CLASSES

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S. Ashoori

H. Gharib

S. Jalalipoo[1]

Abstract

Let f be a diffeomorphism of a closed n-dimensional C^∞ manifold, and p be a hyperbolic saddle periodic point of f. In this paper, we introduce the notion of C^1-persistently sensitive for a closed f-invariant set. We prove that for the homoclinic class $H_f(p)$ of f, if $f_{|H_f(p)}$ is C^1-persistently sensitive then $H_f(p)$ admits a dominated splitting. Especially, on a 3-dimensional manifold, the splitting on $H_f(p)$ is partially hyperbolic, and if in addition, f is far from homoclinic tangency, then $H_f(p)$ is strongly partially hyperbolic.

Mathematics Subject Classification: 37B20, 37C29, 37C50.
Keywords: Persistently sensitive, Homoclinic class, Dominated splitting, Partially hyperbolic, Strongly partially hyperbolic.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Saturation of submodules of Multiplication Modules

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Abstract

Let R be a commutative ring and M be a unitary R-module. For a prime ideal p of R and submodule N of M, the submodule $\{m \in M : rm \in N \text{ for some } r \in R - p\}$ of M, denoted $S_p(N)$, is called the saturation of submodule N. In this work we study the saturation of certain submodules IN(specially pM) related to an ideal I(specially prime ideal p) of R and submodule N of M. It is shown that for an ideal I of R and finitely generated multiplication R-module M, $S_p(IM) = S_p(I)M$. Using this we obtain the reduced and module-reduced primary decomposition of IM of a reduced primary decomposition of I.

Mathematics Subject Classification: 13A99; 05C25; 13C99

Keywords: Saturation, Radical of a submodule, Prime submodule, Prime specteum

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the Completeness,and basis property of the function system cosin in the space sobolev $(W_p^1(0,\pi))$

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M.Ghasemi

Abstract

In the present paper,we proved that the completeness,and basis property of the function system cosine in the space sobolev.

Mathematics Subject Classification: 35j70
Keywords: Inequality.Frankl problem,Bessel equation,Fubini theorem,Lebesgue integral,spase sobolev.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Regularity of elements for $T_{E^*}(X)$

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Iran.

Abstract

Let T_X be the full transformation semigroup on a set X. For a non trivial equivalence E on X, let $T_E(X) = \{f \in T_X : \forall a, b \in X, (a, b) \in E \Rightarrow (f(a), f(b)) \in E\}$, and $T_{E^*}(X) = \{f \in T_X : \forall a, b \in X, (a, b) \in E \Leftrightarrow (f(a), f(b)) \in E\}$. In this paper , we discuss regularity of elements for these semigroups.

Mathematics Subject Classification: 20M20.
Keywords: Semigroup, Transformation, Equivalence, Regular element.

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12-15 September 2010, University of Urmia, Urmia-Iran

Operator valued p -frames

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Abstract

In this paper we introduce the concept of operator valued p-frames and we give a characterization of operator valued p-frames. Also we show that if a Banach space X can be equipped with an operator valued p-frame then each member of X^* will be represented by an unconditionally convergent series.

Mathematics Subject Classification: Primary 41A58, Secondary 42C15.

Keywords: p-frame, operator valued p-Bessel sequence, operator valued p-frame.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Note on the Schur multiplier of Lie algebras

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Abstract

In this article, we remind the concepts of homology, cohomolgy and the Schur multiplier of a Lie algebra. Using homological methods, a relation between homology and cohomology of a Lie algebra is given. Also, we obtain some inequalities and certain bounds for the dimension of $\mathcal{M}(L)$.

Mathematics Subject Classification: 17B30, 17B60, 17B99.
Keywords: Lie algebra, homology and cohomology, Schur multiplier.

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Using Adomain's Decoposition Method For Solving Newell-Whithead Equation

R. Ezati and K. Shakibi

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.

Abstract of 41st Annual Iranian Mathematics Conference
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answering some old questions about nontrivial minimal blocking set by covering groups.

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Abstract

In this paper we introduce application of covering groups by subgroups for answering some old questions about nontrivial minimal blocking set and we give nontrivial minimal blocking sets in $PG(3,3)$ of sizes 7 and 8; and in $PG(4,3)$ of size 9. Non-existence of a minimal blocking set of size 27 is still open.

Mathematics Subject Classification: 51E21, 20D60.
Keywords: Blocking sets; projective spaces, maximal irredundant cover for groups, covering groups by subgroups

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On The Shannon Wavelets Approximation For The Volterra Integro Differential

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Department of Mathematics,
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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Pseudometric on BCK-algebras

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T.Roudbari

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Abstract

In this note we defined a pseudometric on BCK-algebras.We use this meter for defining neighborhoods, open and closed sets and hausdorff sets in BCK-algebras and prove theorems and we define the ralation between them.

Mathematics Subject Classification: 06F35, 03G25, 08A05.
Keywords: BCK-algebras, BCK-class, $NBCK$-class, Pseudometric.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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APPROXIMATE GENERALIZED JORDAN DERIVATIONS ON BANACH MODULES

SAED OSTADBASHI

ROGAYEH ALAVI[1]

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Hyperspace and Powerdomain

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M. Pourmahdian

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Abstract

We consider a powerdomain of the space of formal balls $\mathbf{B}X$ for a quasi-metric space (X, d), denoted by $\mathbf{CB}X$, as the chain completion of the set of all finite subsets of $\mathbf{B}X$ with respect to the Egli-Milner relation and prove that there is an embedding map between $\mathcal{K}_0(X)$ with Vietoris topology and $\mathbf{CB}X$ with Scott topology.

Mathematics Subject Classification: 54B20.
Keywords: Formall ball, Hyperspaces, Powerdomain, Vietoris topology.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Triangular functions method for the solution of population balance differential equation

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Abstract

In this paper, triangular orthogonal functions (TF) method is applied as a basis in collocation method, to solve the population balance equation, which arise in the description of particle-size distribution of a continuous, mixed-suspension, mixed product removal crystallizer with taking account of the effect of particle breakage. To demonstrate the validity of this method obtained results have been compared with other methods.

Mathematics Subject Classification: Primary 65Z05, Secondary 65M70, 41A30.

Keywords: Triangular orthogonal functions, Population balance equation, Collocation method.

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12-15 September 2010, University of Urmia, Urmia-Iran

Inverse Minimax Location Optimization with augmentation of Arc Lengths

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Abstract

In this investigation, we consider the inverse absolute and vertex minimax location problems with arc length augmentation on a tree network T with $n+1$ vertices. The aim is to increase the arc lengths in the cheapest possible way such that a prespecified vertex of T becomes an absolute (or a vertex) minimax location under the modified lengths. We develop an $\mathcal{O}(n \log n)$-time optimal algorithm for this problem. Moreover, an $\mathcal{O}(n \log n)$-time algorithm is proposed for the cardinality constrained variant of the inverse minimax location problem with equal cost coefficients.

Mathematics Subject Classification: 90C27, 90B80, 90B85.
Keywords: Mminimax location optimization, Inverse optimization, Knapsack models.

Abstract of 41st Annual Iranian Mathematics Conference
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Symbols of Fourier Integral Operators

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

COMPACT ENDOMORPHISMS OF $Lip_A(\bar{\mathbb{D}}, K, \alpha)$

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Abstract

Let Ω be a domain in complex plane such that $\Omega \subseteq \mathbb{D}$ and let $K = \overline{\Omega}$, where $\mathbb{D}$ is the open unit disk $\{z \in \mathbb{C} : |z| < 1\}$. We take $A(\overline{\mathbb{D}}, K) = \{f \in C(\overline{\mathbb{D}}) : f|_K \in A(K)\}$, where $A(K)$ is the algebra of continuous complex-valued functions on K which are analytic on $int(K)$. It is known that $A(\overline{\mathbb{D}}, K)$ is a natural uniform algebra on $\overline{\mathbb{D}}$. In this note we study endomorphisms of certain natural uniform subalgebras of $A(\overline{\mathbb{D}}, K)$ and investigate necessary and sufficient conditions for which these endomorphisms to be compact.

Mathematics Subject Classification: Primary 46J10, Secondary 46J15.

Keywords: Analytic functions, Banach function algebras, Compact endomorphisms.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Annihilating-Product-One Side-Ideal graph

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Abstract

For a commutative ring R with identity, the annihilating-ideal graph of R, denoted AG(R), is the graph whose vertices are the nonzero annihilating ideal of R with two distinct vertices joined by an edge when the product of the vertices is zero. This article extend the definition of the annihilating ideal graph to non-commutative rings.

Mathematics Subject Classification: primary 16U99, Secondary 05C50, 16S50.

Keywords: The Annihilating-ideal graph, The Annihilating-Product-One side-Ideal graph.

[1]speaker

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Computing Minimal Polynomial of Matrices by Grobner Bases

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Radial basis Functions for solving of nonlinear integral equation illustrating thermal radiation in a kerr blackbody

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M. Eatesami

G. B. Loghmani

Abstract

Solution of nonlinear integral equation are often cost and difficult. There are many methods for solving these equations. We introduce radial basis functions(RBFs) as a tool of approximation that can be used for constructing solution of integral equation [**?**]. Here, RBFs are applied for solving of nonlinear integral equation illustrating thermal radiation in a kerr blackbody.

Mathematics Subject Classification: 45Gxx, 33F05, 97N40.
Keywords: Integral equation, Radial Basis Functions, Modeling.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Nonlinear Regression via Radial Basis Functions on Dentistry Data

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Zakieh Avazzadeh

M.T. Shakeri

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Abstract

Nonlinear regression models often have complex structure [**?**]. There are many methods for constructing these models. We introduce radial basis functions(RBFs) as a tool of approximation that can be used for finding curve through a series of data. In fact, unknown parameters adjust the amount of overlapping basis functions and adopts the information of the input and response variables. We use real dentistry data that can not be fitted on linear regression.

Mathematics Subject Classification: 62J02, 33F05, 65Fxx, 93E24.
Keywords: Nonlinear Regression, Radial Basis Functions, optimization, least square method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Sezabo operator in Lorentzian manifolds

S. Aimpour[1]

A. Haji Badali

M. Toomanian

Abstract

In this paper, we classify Sezabo operator related to Ricci operator of three-dimensional Lorentzian manifold. Also we construct the necessary and sufficient condition for function $f(t, x, y)$ of the Walker metric of three-dimensional manifolds, to have, zero Sezabo operator.

Mathematics Subject Classification: Primary 53C30, Secondary 53C50, 53C80.

Keywords: Lorentzian manifolds, Walker manifolds, Curvature tensor, Sezabo operator.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Iterative Formulae for Computing The Inverse of A Square Matrix

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Abstract

In this paper, a new family of iterative formulae of order k for $k \geq 2$ is presented that computes the inverse of a nonsingular matrix A.

Mathematics Subject Classification: 15A09, 65F10, 11D04.

Keywords: Matrix inversion, Iterative methods, Linear equations.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Analytic solution of nonlinear partial differential equations by tanh-coth method

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Abstract

Nonlinear partial differential equations in mathematical physics play a majer role in various fields. In this work we derive travelling wave solutions for the Burger's equation. The tanh-coth method is used to determine these sets of travelling wave solutions. We also answer to this question that "Does this method derives all sets of soluations?".

Mathematics Subject Classification: Primary 65M99, Secondary 65N99.

Keywords: The tanh-coth method,Wave variable, Nonlinear partial differential equations .

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Iterated Importance Sampling Algorithm for Estimating the Order of Autoregressive Process in the Poisson Stochastic Volatility Models

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Abstract

Importance sampling methods can be iterated like MCMC algorithms, while being more robust against dependence and starting values as shown in Cappé et al. (2005). In this work we use this algorithm to estimate the order of autoregressive process which is dynamic part of the models called Poisson Stochastic Volatility models.

Mathematics Subject Classification: Primary 62F40; Secondary 63F15.

Keywords: Adaptive algorithms, Population Monte Carlo, Dynamic Generalized Linear Models; Poisson Regression; Poisson Stochastic Volatility;

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Discrete Gabor transform on finite non-abelian groups

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Abstract

Let G be finite non-abelian group and $\ell(G)$ be the set of all complex valued functions on G. We define Gabor transform of $f \in \ell(G)$ with respect to a window function $g \in \ell(G)$ and we study basic properties of this transform. Also, we find a matrix interpretation for this transform.

Mathematics Subject Classification: 43A30, 43A32.
Keywords: Discrete Gabor transform, Fourier transform, Plancherel formula, unitary representation, irreducible representation.

[1]speaker

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Multistep Collocation methods for nonlinear two dimensional Volterra integral equation

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S. Shahmorad

Abstract

In this paper, we construct multistep collocation methods for nonlinear two dimensional Volterra integral equation. These methods depend on the numerical solution in a fixed number of previous time and spatial steps. We analyze the order of resulting methods and show the efficiency of the method by some numerical examples.

Mathematics Subject Classification: 65R20.
Keywords: Multistep collocation methods, Two dimensional Volterra integral equation.

[1]speaker

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Laplace transform-Adomian decomposition for Volterra's Population model[1]

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Abstract

In this paper, a combined form of the Laplace transform method with the Adomian decomposition method is developed for analytic treatment of the Volterra's model for population growth of a species within a closed system. This model is a nonlinear integro-differential equation where the integral term represents the effect of toxin.

Mathematics Subject Classification: 45A05, 45B05, 45D05, 45J05, 47G20.

Keywords: Laplace transform-Adomian decomposition method, Volterras population model, Padé approximants.

[1]speaker

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12-15 September 2010, University of Urmia, Urmia-Iran

On 3-Rewritable Groups

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Department of Mathematics,
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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

ON THE QUASIMONOTONE AND MONOTONE MAPS

ALI FARAJZADEH

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical algorithm for solving linear systems using iterative refinement Monte Carlo method

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M. Aalaei

Abstract

In this paper, a numerical algorithm involving the combined use of iterative refinement method and Monte Carlo method is proposed for solving linear systems. A numerical test is performed in order to show the efficiency and accuracy of the present work.

Mathematics Subject Classification: 65C05, 65N22.
Keywords: Iterative refinement method, Monte Carlo method, Linear systems .

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Best Uniform Polynomial Approximation For a Class Of Rational Function

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Certain Subclasses of convex Functions with Positive and Missing Coeffecient by using a Fixed Point

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Urmia University, Urmia, Iran
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Keywords: P-valent function, Coefficient estimate, Distortion dound, Fixed point.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The use of homotopy analysis method to approximate the solution of Schrödinger equation

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Sh. Sadigh Behzadi

Young Researchers Club, Islamic Azad University, Central
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Abstract

The Schrödinger equation is a typical partial differential equation that plays an important role in different areas of chemistry and mathematical physics. In this work, we apply the homotopy analysis method (HAM) to approximate the solution of the Schrödinger equation and compare the results with the modified variational iteration method (MVIM).

Mathematics Subject Classification: Primary 65M99, Secondary 35QX55.

Keywords: Schrödinger equation, Homotopy analysis method, Modified variational iteration method,

[1]speaker

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New strategy for approximating the p.d.f. of stable distributions

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S. M. Hashemiparast

Abstract

In this short note, first basic concepts of stable distributions are introduced. Also, the fractional calculus as a means of stable distributions are expressed. Two specific fractional partial differential equations, which their fundamental solutions are probability density function of stable distributions are introduced. Finally, the methods to solve these fractional partial differential equations are applied.

Mathematics Subject Classification: 60Exx, 60Gxx, 62JXX.
Keywords: Stable Distributions, Fractional Calculus.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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A Numerical Method For Solution The Burger's-Fisher Equation

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Abstract

In this paper, we propose a numerical scheme to solve the Burger's-Fisher equation. Our scheme uses the collocation points and approximates the solution using Thin Plate Splines (TPS) radial basis functions (RBF). The implementation of the method is simple as well as finite difference methods. The results of numerical experiments are presented, and are compared with analytical solutions to confirm the good accuracy of the prossed scheme.

Mathematics Subject Classification: 65M99, 65N99.
Keywords: Radial basis functions, Burger's-Fisher equation, Collocation method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The incidence chromatic number of some graphs of maximum degree 4

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Abstract

In this paper we investigate the incidence coloring conjecture (ICC) for graphs of maximum degree 4 and prove that ICC holds for some classes of such graphs.

Mathematics Subject Classification: 05C15.

Keywords: Incidence coloring, Incidence chromatic number.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Estimation of the shape parameter of the generalized Pareto distribution under loss functions Convergent Iterative Scheme

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S. Nezamdoust

Abstract

In this paper Bayes estimators of the shape parameter of the generalized Pareto distribution is obtained by taking a given prior distributions using the squared error loss, squared log error loss, precautionary and entropy loss functions. Monte Carlo simulations are presented to compare the Bayesian estimation and the maximum likelihood estimation of the unknown parameter.

Keywords: Generalized Pareto distribution, Bayesian estimation, Loss function, Maximum likelihood estimate.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Cubic symmetric graphs of order $8p^3$

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Abstract

An automorphism group of a graph is said to be s-regular if it acts regularly on the set of s-arcs in the graph. A graph is s-regular if its full automorphism group is s-regular. In this paper all s-regular cubic graphs of order $8p^3$ are classified for each $s \geq 1$ and each prime p.

Mathematics Subject Classification: 05C10, 05C25, 20B25.
Keywords: symmetric graphs, s-regular graphs, regular coverings.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solving systems of linear equations whose coefficient matrices are low rank perturbations of cymmetric matrices

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Barani

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Abstract

MINRES-CN is an iterative method for solving systems of linear equations with conjugate-normal coefficient matrices whose conspectra are located on algebraic curves of a low degree. This method was proposed in a previous publication of author and KH. D. Ikramov. In this paper, the range of applicability of MINRES-CN is extended in new direction. These are conjugate-normal matrices that are low rank perturbations of Symmetric matrices.

Mathematics Subject Classification: 65F10.
Keywords: conjugate-normal matrices, MINRES-CN method, conspectrum.

[1]speaker

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A common Fixed Point Theorems in Menger Spaces with using property (E.A)

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Researchers club, Islamic Azad University- Ghaemshahr
Branch.

Abstract

The main purpose of this paper is to define Menger probabilistic metric space and the nation of weakly compatible and define a new propert and prove a common fixed point theorem for four self maps in menger space with using the notion of property (E.A).

Keywords: Triangle function (t-norm), Menger space, Fixed point theorem, Weak compatibility, property (E.A).

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Almost double derivations on JB^*-triples

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Abstract

In this paper, we obtain the general solution for a following new functional equation

$$\sum_{i=1}^{m} f(mx_i + \sum_{j=1, j\neq i}^{m} x_j) + f(\sum_{i=1}^{m} x_i) = 2m \sum_{i=1}^{m} f(x_i) \qquad (0.1)$$

for a fixed positive integer m with $m \geq 2$. Moreover, we introduce the concept of double derivations and Jordan double derivations on JB^* - triples and investigate the generalized Hyers – Ulam – Rassias stability of double derivations on JB^*- triples associated with functional equation (0.1).

Mathematics Subject Classification: 39B52, 39B82.
Keywords: Hyers – Ulam – Rassias stability, JB^*- triples, double derivation, Jordan double derivation.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Explicit solution of certain classes of differential equations by means of fractional calculus

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Abstract

By means of fractional calculus techniques, we find explicit solutions of a number of linear ordinary and partial differential equations of the second and higher orders. We use the N-fractional calculus operator method to derive the solutions of these equations.

Mathematics Subject Classification: 26A33, 34A08, 34K37.
Keywords: Fractional calculus, Differintegral equations, Homogeneous and nonhomogeneous equations, Analytic functions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Modal Operators on Pseudo Hoops

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Abstract

In this paper, we introduce the notion of modal operators (special cases of closure operators) on a pseudo hoop and obtain some related results. In particular, we show that each modal operator γ on a pseudo hoop induce a normal filter and there exists an isomorphism between the quotient algebra induced by this normal filter and the set of all fix points of γ.

Mathematics Subject Classification: 06F99, 08A30, 94D05.
Keywords: Pseudo hoop, Modal operator, Normal filter, Congruence.

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INTERPOLATION OF QUASI-BANACH SPACES

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Abstract

let (A_0, A_1) be a compatible couple of quasi-Banach spaces in the interpolation theory sense. Some theorems about real interpolation of quasi-Banach space readjusted. We give a maximal description in the sense of Aronszajn-Gagliardo for the real methods in the case of quasi-Banach quaternion.

Mathematics Subject Classification: 46B70, 46M35.
Keywords: interpolation space.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Special Representations of the Parabolic subgroubs of simple triality groups $3D_4(2^n)$.

Maryam Ghorbany

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Abstract

A square matrix over the complex field with non-negative integral trace is called a quasi-permutation matrix.Thus every permutation matrix over C is a quasi-permutation matrix. The minimal degree of a faithful representation of G by quasi-permutation matrices over the complex numbers is denoted by $c(G)$ and $r(G)$ denotes the minimal degree of a faithful rational valued complex character of G. The purpose of this paper is to calculate above quantities for the maximal parabolic subgroups of simple triality groups ${}^3D_4(2^n)$.

Mathematics Subject Classification: 20C15.
Keywords: Chevalley group ,Character table,Shur index, Quasi-permutation representation.

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On normal matrices that commute with their complex conjugate

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Abstract

We consider the class of normal complex matrices that commute with their complex conjugate.We show that such matrices are real orthogonally similar to a canonical direct sum of 1-by-1 and certain 2-by-2 matrices. A canonical form for quasi-real normal matrices is obtained as a special case. We also exhibit a special form of the spectral theorem for normal matrices that commute with their conjugate.

Mathematics Subject Classification: 15A21; 15A57.

Keywords: Canonical form, Real normal matrix, Quasi-real normal matrix, Real orthogonal similarity, Unitary similarity.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
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reconstruction of a jacobi matrix from mixed eigendata

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Abstract

In this paper we consider the construction of a $n \times n$ jacobi matrix J of the form

$$J = \begin{pmatrix} J_1 & b_k e_k e_1^T \\ b_k e_k^T e_1 & J_2 \end{pmatrix}$$

from mixed eigendata $\lambda_1, \mu_1, \mu_2 \in \Re, X = (x_1, x_2, ..., x_n) \in \Re^n, Y_1 = (y_1, y_2, ..., y_k) \in \Re^k, Y_2 = (y_{k+1}, y_{k+2}, ..., y_n) \in \Re^{n-k}$such that $X = \lambda CX, J_i = \mu_i C_i Y_i, i = 1, 2$, where C is a given jacobi matrix. Here $0 < k < n$ and J_1, J_2 are $k \times k$ and $(n-k) \times (n-k)$ square matrices, respectively. Indeed We consider a generalized inverse eigenvalue problem of the form $Ju = \lambda Cu$.

Mathematics Subject Classification: 65F15, 65H15.

Keywords: Jacobi matrix, Eigenvectors, Inverse eigenvalue problem

[1]speaker

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On the circuits and cocircuits of splitting matroids

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Abstract

In this paper, we characterize the circuits and cocircuits of splitting matroids M_X, M'_X in terms of the circuits and cocircuits of the original matroid M.

Mathematics Subject Classification: 05B35.
Keywords: Binary matroid, Splitting matroid, Circuit, Cocircuit, Support of a vector.

[1]speaker

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(α, β)-Jordan Derivations of Triangular Algebras

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Abstract

Let A and B be unital algebras over a commutative ring R, and M be a unital (A, B)-bimodule and α, β be algebra homomorphisms of A. This paper determines all homomorphisms and hence all automorphisms of the triangular algebra $Tri(A, M, B) = \begin{pmatrix} A & M \\ 0 & B \end{pmatrix}$ and using the characterizations, it is shown that under some conditions, every (α, β)-Jordan derivation from the triangular algebra $Tri(A, M, B)$ into itself is an (α, β)-derivation. As a consequence several known results is extended.

Mathematics Subject Classification:

Keywords: triangular matrix algebra, homomorphism, automorphism, (α, β)- derivation, (α, β)-Jordan derivation.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Nehari manifold for semilinear equation with Dirichlet BOUNDARY condition

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Abstract

The Nehari manifold for the equation $-\Delta u(x) = b(x)u^p$ for $x \in \Omega$ together with Dirichlet boundary condition is investigated.

Keywords: variational method, Nehari manifold,Fibering maps.

[1]speaker

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Solution of nonlinear inverse problem by Tikhonov regularization method

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Abstract

In this paper, a numerical algorithm based on finite-difference method and the least-squares scheme for solving a nonlinear inverse diffusion problem is proposed. At the beginning of the numerical algorithm, Taylors series expansion is employed to linearize nonlinear terms, removed the time-dependent terms by Laplace transform, and then finite-difference method is used to discretize the problem domain. The present approach is to rearrange the matrix forms of the differential governing equations and estimate unknown diffusion coefficient. The least-squares method is adopted to find the solution. To regularize the resultant ill-conditioned linear system of equations, we apply the Tikhonov regularization method to obtain the stable numerical approximation to the solution. All the computations are performed on the PC.

Mathematics Subject Classification: Primary 65M32, Secondary 35K05.

Keywords: Diffusion coefficient, Nonlinear inverse diffusion problem, Finite difference method, Least-squares method, Regularization method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On ϕ-symmetric Kenmotsu manifolds

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Abstract

In the present paper we study the ϕ-recurrent Kenmotsu manifolds and we show that they are ϕ-symmetric. Moreover we show these manifolds are Einstein manifolds.

Mathematics Subject Classification: 53C25, 53D15.

Keywords: ϕ-recurrent manifold, Kenmotsu manifold.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Weakly maximal submodules and local cohomology

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Abstract

In this paper, by using the notion of weakly maximal submodule, we give some results about local cohomology modules.

Mathematics Subject Classification: 13D45, 13E05, 13E10.
Keywords: Weakly maximal submodules, Local cohomology.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Numerical solution of stochastic partial differential equation

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Abstract

In this paper for the approximate solution of stochastic partial differential equations (SPDEs), a class of finite difference method (with regards to the coefficients in the equations) is analyzed and then we discuss a new method based on spectral collocation method. We prove the consistency and stability of finite difference methods and investigate the influence of the multiplier (particularly multiplier of the random noise) in mean square stability. Numerical experiments are included to show the efficiency of these methods.

Mathematics Subject Classification: 60H15, 60H35.
Keywords: Stochastic partial differential system, finite difference method, spectral collocation method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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TOPOLOGICAL GAMES, EQUICONTINUITY AND SIGMA-FRAGMENTABILITY IN FUNCTION SPACE

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Abstract

We will introduce a topological game on $X \times X$, then we will show that if the second player does not have a winning strategy in this play, $C(X)$ with the pointwise topology is framented by the norm. In particular, if X is Valdivia compact, then $C_p(X)$ is sigma-fragmentable by the supremum norm.

Mathematics Subject Classification: Primary 54C30, 54C35, 54C05, Secondary 46E15.

Keywords: Topological game, equicontinuity, pointwise topology.

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12-15 September 2010, University of Urmia, Urmia-Iran

Characterizations of Shift Invariant Spaces

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Abstract

Mathematics Subject Classification: 47A15, 42B99, 22B99.
Keywords: locally compact abelian group, shift invariant space, frame, range function

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Finite Differences Method for Solution of An Inverse Problem with Nonlinear Source Term

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Abstract

In this paper, a nonlinear problems of inhomogeneous heat equation with linear boundary conditions will be considered. The surface temperature history of a heat conducting body will be identified. The approach of proposed method is approximated unknown function by polygons linear pieces which are determined consecutively from the solution of minimization problem based on the overspecified data. Some numerical examples also will be presented.

Mathematics Subject Classification: Primary 65M15, Secondary 35R30.

Keywords: Direct and Inverse Heat Conduction Problem, Residual Minimization, Chebyshev Polynomial, Least-Square Method, Implicit Finite Differences Approximation.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

KDV-Burrgers Solution with Convergence Analysis

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Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

To Introduce a New Multigraph for Groups

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Abstract

In this paper we define S_m multigraph on arbitrary group G which is a multigraph with m+1 vertexs and parallel edges. Finally we show some cyclic groups are S_m multigraph.

Mathematics Subject Classification: 94C15, 20B05, 00AXX, 05C25.
Keywords: Cyclic Groups, Stabilizers, S_m multigraph

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Approximate Solution of a Singular Integral Equation with a Cauchy Kernel Kernel on the Real Half-Line

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Abstract

In this paper, exact solution of the integral equation with Cauchy kernel on the real half-line is presented. Then, Chebyshev polynomials are used to derive approximate solution of this equation.

Keywords: Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Computing the Complete CS Decomposition

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Abstract

An algorithm is developed to compute the complete CS decomposition (CSD) of a partitioned unitary matrix. The algorithm computes the complete 2-by-2 CSD, which requires the simultaneous diagonalization of all four blocks of a unitary matrix partitioned into a 2-by-2 block structure.The computation occurs in two phases. In the first phase, the unitary matrix is reduced to bidiagonal block form, as described by Sutton and Edelman. In the second phase, the blocks are simultaneously diagonalized using techniques from bidiagonal SVD algorithms of Golub, Kahan, and Demmel.

Mathematics Subject Classification: 65F30.
Keywords: singular value decomposition, bidiagonalization.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Numerical investigation of a Stefan problem arises from the release of drug from drug-delivery devices

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Abstract

In this paper a general model is presented for the release of drug from porous nonswelling, transdermal drug-delivery devices. This model is investigated for a spacial case and analytical and numerical solutions based on wave similarity solutions and finite differences method are derived.

Mathematics Subject Classification: 65M06, 92B05, 35K15.
Keywords: drug-delivery devices, diffusion, moving boundary problem, numerical method

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Survey of cumulative residual entropy

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O.Kamari

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Abstract

Recently, Rao et al[3], Asadi and Zohrevand[2] and Navarro et al[1] defined the cumulative residual entropy, dynamic cumulative residual entropy and dynamic cumulative past entropy, respectively, as some new measures of uncertainty. They studied some properties and applications of these measures. In this paper we obtain some results connecting these measures on the weighted distribution.

Keywords: Reliability function, Cumulative residual entropy, Dynamic cumulative past entropy, weighted distribution .

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Mathematical Study of Magnetic Resonance Imaging Process in Blood Vessels

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Mathematics Subject Classification: 65M06, 92B05, 35K20.
Keywords: Bloch NMR equations, Differential equations, Boubaker polynomials;finite difference method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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New approach of variational iteration method for nonlinear partial differential equations with exponential nonlinearity

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Central Tehran Branch, Payambar Complex, Shahrak Gharb,
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Abstract

In this work, new approach of the variational iteration method by using r terms of Taylor's series is applied for solving nonlinear partial differential equations with exponential nonlinearities. Numerical results are revealing its effectiveness and simplicity.

Mathematics Subject Classification: 35A35, 65M99, 65N99.
Keywords: Nonlinear partial differential equation, Exponential nonlinearity, Variational iteration method, Taylor's series.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The power graph of groups

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Abstract

The power graph of a group G is the graph whose vertex set is G and two elements being adjacent if one is a power of the other. We obtain some properties of graph theory such as independence number and clique number for group $Z_{p^\alpha} \times Z_2$ and group D_{2p^α}, where p is a prime number and $\alpha \geq 1$ is a positive integer.

Keywords: group, power graph, independence graph, clique number.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Inner Totally Positive Matrices with Two Spectrum in Common

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F. Gilasi

Abstract

Let $\sigma(A)$ be the set of eigenvalues of A and $\sigma_i(A)$ be the set of eigenvalues of A_i, where A_i is submatrix of A after deleting the i^{th} rows i^{th} column of A. Suppose $\rho = \{\rho_1, \rho_2, \ldots, \rho_n\}$ and $\gamma = \{\gamma_1, \gamma_2, \ldots, \gamma_n\}$ be staircase sequences. A matrix $A \in M_n$ is called a *staircase* matrix with row and column, ρ, γ; if $a_{ij} = 0$ when $i > \gamma(j)$ or $j > \rho(i)$. A minor $A(\alpha; \beta)$ with $\alpha = \{\alpha_1, \ldots, \alpha_k\}$, $\beta = \{\beta_1, \ldots, \beta_k\}$ is said to be an *inner minor* of A if $\alpha_i \leq \gamma(\beta_i)$, $\beta_i \leq \rho(\alpha_i)$ for $i = 1, 2, \ldots, k$. A is said to be *inner tatally positive*(ITP) if every inner minor of A is positive. We show that an ITP matrix may be reduced by similarity transformations to an ITP band matrix, and may alternatively be filled-in by similarity transformations to become a TP matrix. This operations keep two spectrum of the given matrix, i.e. $\sigma(A)$ and $\sigma_i(A)$.

Mathematics Subject Classification: 15A48, 15A23

Keywords: Oscillatory matrices, totally positive matrices, inner totally positive matrices

[1]speaker

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the skew half-normal distribution

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M. Rafiei

Abstract

In this paper we introduce the skew half-normal distribution, which is skewed by the parameter λ and is denoted as SHN(λ). This distribution belongs to a family of distribution which includes the half-normal distribution along with an extra parameter to regulate skewness. We derive the density function and various properties of this new distribution. The properties derived include the cumulative distribution function, the rth moment, the rth central moment, moment generating and characteristic functions, mean deviation about the mean, Renyi and Shannon entropy, estimation of parameter by the method of maximum likelihood and simulation issues. Finally, the flexibility of the new distribution is illustrated in an application to a real data set.

Mathematics Subject Classification: Primary 62E99, Secondary 60E99.

Keywords: half-normal distribution, hypergeometric function, skweness, moment generating function.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Induced topological pressure for countable state markov shifts

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Abstract

In this paper we introduce the notion of induced topological pressure for countable state Markov shift. This helps to clarify the connection between the various different notions of pressure for such Markov shift. One first natural application of our formalism is given by an exhausting principle. Also special flows of countable state Markov systems will be discussed in some detail.

Mathematics Subject Classification: Primary 37A45, Secondary 37D35.

Keywords: Thermodynamical formalism, pressure, special flows, group extensions, countable state Markov shift.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

SOME RESULTS ON LOCAL COHOMOLOGY MODULES defined by a pair of ideals

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Abstract

Let R be a commutative Noetherian ring, I and J two ideals of R and M a finitely generated R-module. It is shown that (1) if t is an integer such that $H^i_{I,J}(M)$ is finitely generated for all $i < t$ and N a finitely generated submodule of $H^t_{I,J}(M)$, then $H^t_{I,J}(M)/(N + JH^t_{I,J}(M))$ has finite associated primes; (2) if M is of dimension n, then $H^n_{I,J}(M)/JH^n_{I,J}(M)$ and $H^n_{I,J}(M)/IH^n_{I,J}(M)$ are Artinian.

Mathematics Subject Classification: 13D45, 13E10.

Keywords: Artinian modules, Associated primes, Local cohomology modules.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On the geometry of bi-invariant Randers metrics on Lie groups

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Abstract

In this paper we study the geometry of Lie groups with bi-invariant Randers metric. We prove that bi-invariant Randers metrics are of Berwald type. We give an explicit formula for the flag curvature of bi-invariant Randers metrics.

Mathematics Subject Classification: Primary 53C60, Secondary 53C30.

Keywords: Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A new modified homotopy analysis method for solving nonlinear differential-algebraic equations

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Maalek Ghaini. F. M

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Abstract

In this paper, modified homotopy analysis method is used for numerical solution of nonlinear systems of differential-algebraic equations. This method is very simple and convenient to give approximate solution. The scheme is tested for two nonlinear systems of differential-algebraic equations and the results demonstrate simplicity and efficiency of this method.

Mathematics Subject Classification: 65L80, 34A09.

Keywords: Differential-algebraic equations, Homotopy analysis method, Modified homotopy analysis method.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Solving boundary value problems of fractional order by Galerkin methods with fractional polynomials

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Abstract

In this presentation, numerical solutions are obtained for the Zakharove-Kuznetsov equation by Variational Homotopy Pertebration method(VHPM) and Variational iteration method (VIM) are discussed. Comparisons are made among the Variational Iteration Method (VIM) and the proposed method (VHPM). The results reveal that the proposed method VHPM is very effective and can be used for other nonlinear problems in mathematical.

Mathematics Subject Classification: Primary 65L60, Secondary 34A08.

Keywords: Galerkin method, Fractional integral, Caputo fractional derivative, fractional polynomials.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Collocation method for solving Fredholm integral equation of the first kind using Shannon wavelet system

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Esmail Babolian

Department of Mathematics, Tarbiat Moallem University, Tehran, Iran.

Saeed Hatamzadeh-Varmazyar

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Abstract

Wavelet-collocation approach for numerical solution of linear Fredholm integral equation of the first kind with specific kernels arising in electromagnetics problems is presented. We implement the method in two ways; using Shannon scaling functions alone, and using Shannon scaling functions together with Shannon wavelet functions. Its computational efficiency is compared with that of collocation method using Haar scaling functions.

Mathematics Subject Classification: Primary 65R20, Secondary 41A30.

Keywords: First kind Fredholm integral equation, Collocation method, Numerical solution, Shannon wavelet system.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Fractional Fourier Transform and its applications

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Abstract

In this paper, we introduce the fractional Fourier transform (FRFT) and then present some new results, such as the interpretation of this transform as a rotation in the time-frequency plane, which can be thought of as the fourier transform (FT) to the n-th power where n need not be an integer. Then, an application of the FRFT is given, and finally we will investigate two advantages of the FRFT in comparison with FT.

Mathematics Subject Classification: 42A38, 26A33, 34k37.
Keywords: Fractional Fourier Transform, Fourier Transform, signal processing and analysis.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Periodic Quasi-Wavelets for Nonlinear Integral Equations

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Abstract

A survey on the use of the periodic quasi-wavelets method for solving nonlinear integral equations is presented. This problem is solved with the aid of collocation technique to reduce the solution of nonlinear integral equations to a nonlinear system of equations which can be solved by the Newton's method.

Mathematics Subject Classification: Primary 45G15, Secondary 65T60.

Keywords: Nonlinear integral equation, Periodic quasi-wavelets, Collocation method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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On the numerical solution of Zakharove-Kuznetsov equation

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Abstract

In this presentation, numerical solutions are obtained for the Zakharove-Kuznetsov equation by Variational Homotopy Pertebration method(VHPM) and Variational iteration method (VIM) are discussed. Comparisons are made among the Variational Iteration Method (VIM) and the proposed method (VHPM). The results reveal that the proposed method VHPM is very effective and can be used for other nonlinear problems in mathematical.

Mathematics Subject Classification: 47J30, 49S05.
Keywords: Variational Homotopy Pertebration Method, Variational Iteration Method , Zakharove-Kuznetsov equation.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Refinement by Iteration for Approximated Eigenvalues of Bounded Operators on a Banach Space

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Abstract

In this paper, we introduce some defect correction methods, refining the approximations of eigenpair of a bounded operator defined on a Banach space. These methods consist the elementary iteration, double iteration, Rayleigh-Schrödinger iteration, and acceleration refinement methods.

Mathematics Subject Classification: 45C05.

Keywords: elementary iteration, double iteration, Rayleigh-Schrödinger iteration, acceleration refinement.

[1]SPEAKER

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Criteria for Maximal Abstract Monotonicity with Applications in Optimization

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Abstract

In this paper, we develop a theory of monotone operators in the framework of abstract convexity. Indeed, by using an additivity constraint qualification, we prove a generalization of Fenchel's duality theorem in the framework of abstract convexity, and give criteria for maximal abstract monotonicity. Finally, we present necessary and sufficient conditions for maximality of abstract monotone operators.

Mathematics Subject Classification: Primary 47H05, 47H04, 52A01, 26A51, Secondary 26B25.

Keywords: Constraint qualification, Generalized Fenchel's duality, Monotone operator, Abstract monotonicity, Abstract convex function, Abstract convexity.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

SMALL CONJUGACY CLASSES IN THE AUTOMORPHISM GROUPS OF RELATIVELY FREE GROUPS $F/\acute{R}$

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Fasa, Iran

Abstract

In a series of papers [4,6,7] Dyer and Formanek justified several conjectures by Baumslay on the automorphism towers of finitely generated relatively free groups. In particular, they proved that the automorphism group $\mathrm{Aut}(F_n/\acute{R})$ of the group $F_n/\acute{R}$ is complete where R is a characteristic subgroup of F_n which is contained in the commutator subgroup$\acute{F}_n$ of F_n such that the quotient group F_n/R is residually torsion-free nilpotent. The aim of the present paper is to extend the latter result to infinitely generated relatively free groups.

[1]SPEAKER

Abstract of 41st Annual Iranian Mathematics Conference
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A REMARK ON THE ABELIAN p-GROUPS

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Abstract

In this paper we try to classify all finite abelian p- groups with multipliers of the same order.

Mathematics Subject Classification: 20D15; Secondary 20E34; 20F18.
Keywords: Finite abelian p-group, Schur multiplier.

Abstract of 41st Annual Iranian Mathematics Conference
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Numerical solution of fractional integro-differential equations by using Legendre wavelets

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Faculty of Mathematics,Yazd University, Yazd, IRAN.

Abstract

In this study, the Legendre wavelet and its operational matrix of integration are first presented. Legendre wavelet approximating method is then employed to reduce the fractional integro-differential equation to the algebraic equations. Illustrative examples are included to demonstrate the validity and applicability of the technique.

Keywords: Inequality

[1]speaker

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Hybrid Steepest-Descent Methods for a New Class of Nonlinear Operators

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Abstract

In this talk, we prove the following: Let $T : H \to H$ be a nonexpansive mapping with $C = Fix(T) \neq \emptyset$ and $B : H \to H$ be (r, T)-strongly monotone and μ-Lipschitzian. Applying hybrid steepest-descent method, we generate a sequence $\{x_n\}$ converging strongly to the unique solution of the variational inequality $VI(B, C)$.

Mathematics Subject Classification: Primary 47H09, 47H10, Secondary 47J20.

Keywords: Hybrid steepest-descent methods, convergence, nonexpansive mappings, Hilbert space.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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An overlapping domain decomposition method applied to the method of fundamental solution

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Abstract

We propose an overlapping domain decomposition method (DDM) to improve the method of fundamental solution (MFS). The MFS often tackles the Poisson-type equations by approximating the particular solution using radial basis functions (RBF). The RBF interpolation often leads to ill-conditioned problems. This work suggests a domain decomposition technique which is a standard way to localize the globally supported RBF.

Mathematics Subject Classification: Primary 65C20, Secondary 35A08, 65M55.

Keywords: Method of fundamental solution, Overlapping domain decomposition.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

C_0-semigroups and center manifold theory

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Abstract

In this paper we extend center manifold theory to a class of infinite dimensional problems. For simplicity we only consider equations of the form $\dot{w} = Cw + N(w), \quad w(0) \in Z$ where Z is a Banach space, C is the generator of a strongly continuous linear semigroup $S(t)$ on Z and $N : Z \longrightarrow Z$ has a continuous second derivative with $N(0) = 0, N\acute{(}0) = 0$.

Mathematics Subject Classification: 34C05, 34A34.
Keywords: C_0-semigroup, center manifold, generator, invariant.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Regression Outliers with Singular Spectrum Analysis

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Shahid Beheshti University, Tehran, Iran.

Mathematics Subject Classification: 62J05, 93E10, 93E11.
Keywords: Least Square, Outlier, Singular Spectrum Analyze.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Values represented by a Pfister form

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Abstract

A result due to A. Pfister gives a lower bound for the number of square classes of the multiplicative group of a field K in terms its *level*. The aim of this talk is to present a generalization of this result by obtaining a lower bound for the index of the group of nonzero values represented by a Pfister form. This talk is based on an ongoing collaboration with G. Berhuy (Institut Joseph Fourier) and N. Grenier-Boley (Université de Rouen).

Mathematics Subject Classification: Primary 11E04, 11E25, 11E39, 11E81

Keywords: Level of a field, quadratic form, Pfister form, sums of squares, number of square classes.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Orthogonal Collocation Method for Fractional Integro-Differential Equations

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F. Ghoreishi

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Abstract

In this paper, the orthogonal collocation, an easy-to-use variant of the spectral methods for the numerical solution of fractional integro-differential equations(FIDE's), is considered. In order to obtain matrix-vector-product approach for spectral approximations to FIDEs, the kernel function in integral term is approximated by using two variable interpolation polynomials. Numerical results are presented, which clarify the high accuracy of the method.

Mathematics Subject Classification: Primary 65R20, Secondary 34A05.

Keywords: Fractional integro-differential equations, Caputo derivative, orthogonal collocation method.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

An Equitable Fixed Cost Allocation Method

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Islamic Azad University, Semnan, Iran

Abstract

Li et. al. (Eur.J.Oper.Res.(2009)) argued that the method of treating the allocated cost as an extra input of each DMU is questionable. Generally speaking, if each DMU has other cost measures then the allocated cost should be combined with these costs to form a single input measure during performance measurement. They developed a DEA-based approach to allocate the fixed cost among various DMUs. Their method was hardly computational and the first principle: the minimum gaps on the allocated cost among all DMUs, was questionable. In this paper we improve their method and develops a DEA approach to allocate the fixed cost among various DMUs in an equitable way.

Mathematics Subject Classification: 90Cxx; 90C05

Keywords: Data Envelopment Analysis; equitable allocation.

[1]Speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Characterization of a class of Hamiltonian connected graphs

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B. Omoomi

Abstract

. In this paper, we define the concept of critical Hamiltonian connected graphs. We present some necessary conditions for a graph to be critical Hamiltonian connected. Moreover, we characterize all critical Hamiltonian connected graphs which contains a vertex adjacent to all the other vertices.

Mathematics Subject Classification: 05C45, 05C15.
Keywords: Inequality.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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The stone-weierstrass theorem in extended lipschitz algebras

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Abstract

Let (X, d) be a compact metric space and $K \subseteq X$ be a non-empty compact subset. Let $Lip(X, K, \alpha)$ $(lip(X, K, \alpha))$ be the set of functions in $C(X)$ whose restriction on K belongs to $Lip(K, \alpha)$ $(lip(K, \alpha))$. In this paper, we prove an extension of Hedberg's theorem in extended lipschitz algebras.

Mathematics Subject Classification: 46J10, 46J15.
Keywords: Banach function algebra, Lipschitz algebra.

Abstract of 41st Annual Iranian Mathematics Conference
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Inequalities for (α, β)-Normal Operators in Hilbert Spaces

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Abstract

In this paper we study some new inequalities for norm on Banach algebra $B(\mathcal{H})$ of all bounded linear operators $T : \mathcal{H} \to \mathcal{H}$, where $\mathcal{H}$ is Hilbert space and T, (α, β)-normal operator.

Mathematics Subject Classification: Primary 47A12, Secondary 47A30, 47B20.

Keywords: Normal Operator, Majorization Lemma, Numerical Radius, Norm Inequality in Normed Linear and Inner Product Spaces.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On The approximate solution of Integral Equations on Polygons in $\mathbb{R}^2$

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Abstract

This article introduces a numerical scheme for solving integral equations on polygons, based on a Gauss-like cubature formula, which does not need any preprocessing like triangulation of the domain. The applied cubature formula is exact for polynomials of degree at most $2n-1$, using $N \sim mn^2$ nodes, which m is the number of sides that are not orthogonal to a given line and not lying on it. The convergence analysis of the method is also provided and some numerical experiments are presented which confirm the accuracy of the mentioned approach.

Mathematics Subject Classification: 65R20, 45L10, 65D32.

Keywords: Integral equation, Gauss-like cubature, Polygon, Numerical treatment.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical Solution of Functional Integral Equations by Using B-Splines

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A. Shahmohammadi

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Abstract

This paper describes an approximating solution, based on Lagrange interpolation and spline functions, to treat functional integral equations of Fredholm type and Volterra type. This method can be extended to functional differential and integro-differential equations. For showing efficiency of the method we have investigated some numerical examples.

Mathematics Subject Classification: 65R20, 65D07, 65D05.
Keywords: Lagrange interpolation, B-spline functions, Functional integral equation.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Optimal Replacement of Machines in Continuous time Using Integral Equations Approach

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Abstract

The optimal replacement of "machines" or "vintage capital" under Technological Change (**TC**) plays an important role in simulation of economic growth, operations research and management sciences. The optimal replacement process in continuous time can be described by the delay nonlinear Volterra integral equation, in which the unknown function appears both in upper limits of integration and in the integrand and its solution is essential for finding the optimal policy of equipment replacement under technological advances. Here, the numerical analysis and simulation of this model will be discussed.

Mathematics Subject Classification: Primary 45G10, Secondary 49K22.

Keywords: Nonlinear Optimization, Integral Equation, optimal Equipment lifetime.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Combination of Collocation and Multigrid Methods in Solution of the 1-D Telegraph Equation

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Roodehen, Iran.

Abstract

In this article, we introduce a high-order accurate method for solving one-space dimensional Telegraph equation. We apply a compact finite difference approximation of two and four orders for discretizing spatial derivative of linear telegraph equation and collocation method for the time component. This method is unconditionally stable and solves the telegraph equation with high accuracy. In this technique the solution is approximated by a polynomial at each grid point that its coefficients are determined by solving a linear system of equations. We employ the multigrid method for solving the resulted linear system. Multigrid method is an iterative method which has grid independently convergence and solves the linear system of equations in small amount of computer time.

Mathematics Subject Classification: 65M70, 65M55, 65L12.
Keywords: Collocation technique; Compact finite difference schemes; Multigrid method; Telegraph equation.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On subdirectly irreducible S-acts over left zero semigroups

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Abstract

The aim of this paper is to characterize subdirectly irreducible S-acts over left zero semigroups. Also we compute the number of such acts and specify cogenerators acts over left zero semigroups.

Mathematics Subject Classification: 08A60, 08B30, 08C05.
Keywords: S-act, separated, subdirectly irreducible, left zero semigroup.

Abstract of 41st Annual Iranian Mathematics Conference
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ON THE CARDINALITY OF COMPLETELY SIMPLE SUBSEMIGROUPS

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Islamic Azad University of chaloos,
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Abstract

In this paper, the cardinality of a completely simple subsemigroup are considered. In general, the cardinal number of a completely simple subsemigroup of a finite completely simple semigroup S dose not divide the cardinal number of S , as is valid in the group case. We study sufficient conditions for which these properties hold in the completely simple subsemigroup setting.

Mathematics Subject Classification: Primary 20M10, Secondary 20M05.

Keywords: Completely Simple Subsemigroup, Rees Isomorphism.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Unitary Cayley Graph over Finite Commutative Ring

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Abstract

We study the unitary Cayley graph in association with an arbitrary finite commutative ring with an identity element, we compute eigenvalues and classify all hyperenergetic graphs within this class and also we calculate the energy of the complement of this graph. In addition, we prove that if $U\Gamma(R) \simeq U\Gamma(S)$ then $\frac{R}{J_R} \simeq \frac{S}{J_S}$ where J_R and J_S are radical jacobson of R and S respectively.

Mathematics Subject Classification: Primary 05C50, Secondary 16U60.

Keywords: Unitary Cayley graph, Local ring; Category product; Eigenvalue of graph; Energy of graph.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Modification Of Cross Efficiency Obtained By Common Weights

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Islamic Azad University Tehran Central Branch.

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Islamic Azad University Tabriz Branch, Young Researchers club.

Abstract

This paper analyzes the potential flawes which happens when the ultimate average cross efficiency scores are used and we consider the DMU_s as the players in a cooperative game, where the characteristic function values of coalitions are defined to compute the Shapley value of each DMU, and the common weights associate with the imputation of the Shapley values are used to determine the ultimate cross efficiency scores. In this paper, we modified said model for avoiding occurence zero weight in determination of cross efficiency value.

Mathematics Subject Classification: 91A12.
Keywords: Cooperative game, Common weights, Cross efficiency, Data Envelopment Analysis (DEA), Shapley value

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Structures of CTI-Groups

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Iran

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Studies in Basic Sciences (IASBS), Iran

Abstract

A finite group G is called a *CTI-group* if any cyclic subgroup of G has a trivial intersection with its distinct conjugates. In this paper we will describe structures of finite *CTI-groups*.

Mathematics Subject Classification: 20D10, 20E34.

Keywords: CN-Group, TI-Group, ATI-Group, QTI-Group, CTI-Group.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Uniform Continuity Of Exponential Spectrum On Commutative Banach Algebras

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Department of Mathematics, Payame Nour University,
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Abstract

We know that the spectrum function, $x \to Spx$, is uniformly continuous on commutative Banach algebra A . In this paper we see that the exponential spectrum of A , $x \to \varepsilon(x)$, is uniformly continuous too.

Mathematics Subject Classification: 47A11, 47A10, 47B48.

Keywords: spectrum, exponential spectrum.

Abstract of 41st Annual Iranian Mathematics Conference
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g-frame generator sets

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Abstract

We use a unitary system and a set of linear operators to construct a g-frame on H and we obtain some important properties of this class of g-frame generator sets.

Mathematics Subject Classification: 94A12, 42C15, 68M10, 46C05.
Keywords: Frames, Generalized frames, Operator valued frames, G-frame generator sets, Unitary systems.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Weakly compact right multipliers on $L^1(\mathcal{G})''$

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Abstract

In this paper, we investigate some result about weakly compact right multipliers on the Banach algebra $L^1(\mathcal{G})''$. We show that if $\mathcal{G}$ is not amenable, then there is no non-zero weakly compact right multiplier on certain ideals of $L^1(\mathcal{G})''$.

Mathematics Subject Classification: 43A15, 43A20, 47B07, 47B48.
Keywords: Locally compact group, right multiplier, weakly compact operator, right weakly completely continuous element.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Group Classifications and Invariant Solutions of the Cylindrical Helmholtz Equation

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Semnan, I.R.IRAN.

Abstract

In this expository paper, we investigate symmetry properties of cylindrical homogeneous Helmholtz equation for a three dimensional space. Then considering the symmetry group of the equation, we give a complete set of its functionally independent invariants, a form of general solutions, the structure of point symmetry group, an optimal system of one–dimensional subalgebras. In addition, we classify the invariant solutions of the equation by introducing a complete set of fundamental invariants corresponding to each operator of the optimal system.

Mathematics Subject Classification: 34C14, 35J05, 70G65.

Keywords: Helmholtz equation, Lie point symmetries, optimal system, Invariant solutions.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Local Automorphisms of C^*-Algebras with non-zero Commutative Ideal

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Babolsar, Iran.

Keywords: Local automorphisms, Ideal, Purely infinite.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Radical functors related to radical and coradical classes in the category of modules

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Iran.

Abstract

The properties of two classes of radicals in the category of modules; E-radicals and T-radicals are studied by Timoshenko and Krylov. In this paper we study the preradicals and radicals in the category of modules, in their most general form, as radical functors.

Mathematics Subject Classification: 16S90, 16D90.
Keywords: Category, module, radical functor, (co)radical class.

Abstract of 41st Annual Iranian Mathematics Conference
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SUBCLASSES OF MEROMORPHICally UNIVALENT FUNCTIONS ASSOCIATED WITH SALAGEAN OPERATOR

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Zeinab miraliashrafi[1]

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Faculty of science, Urmia, Iran.

Abstract

Making use of salagean operator, new classes of univalent functions was defined. We investigated the coefficient bounds, radii of starlikeness and convexity and some interesting properties for this classes.

Mathematics Subject Classification: Primary 30c45, Secondary 30c45, 30c45.

Keywords: Analytic functions, Starlike and convex functions, Meromorphic functions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

EXISTENCE RESULTS FOR NONHOMOGENEOUS SYSTEMS OF ELLIPTIC EQUATION WITH LACK OF COMPACTNESS

G. A. AFROUZI, M. MIRZAPOUR

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Babolsar, Iran.

Abstract

We establish the existence of a nontrivial solution for inhomogeneous quasilinear elliptic systems, governed by two Pseudo-Laplacian operators. Our result depending on the local minimization.

Mathematics Subject Classification: 35J60; 35J30; 35B40.
Keywords: Elliptic systems; Nehari manifold; Local minimization.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Numerical Study of Nonlinear Partial Differential Equation

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A. Heydari

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Abstract

In this paper, we use a kind of univariate Multiquadric (MQ) radial basis function(RBF) quasi-interpolation to solve nonlinear partial differential equation (PDE). we propose a numerical scheme, by using the derivative of the quasi-interpolation to approximate the spatial derivative of the dependent variable and finite difference method(FDM). Our numerical examples are solving Korteweg-de Vries (KdV) equations.

Mathematics Subject Classification: 37N30.

Keywords: KdV equation, MQ quasi-interpolation, RBF.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A new system of variational inclusions with B-monotone operator in Banach spaces

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Abstract

In this paper, we introduce a new class of operator-B-monotone operators in Banach space. We define a proximal mapping associated with the B-monotone operator and show its Lipschitz continuity. We also consider a new system of variational inclusions with B-monotone operators in Banach spaces and constructed a new iterative algorithm for solving the system of variational inclusions in Banach spaces. Under some suitable conditions, we prove the convergence of the iterative sequence generated by the algorithm.

Mathematics Subject Classification: 49J40, 47H05.
Keywords: B-monotone operator, Proximal mapping, Iterative Algorithm, System of variational inclusions.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Strong Numerical Methods For Stochastic Differential Equations

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Abstract

In this paper we discuss three–stage stochastic Runge–Kutta (SRK) methods for computing strong solutions of Stratonovich stochastic differential equations (SDEs). Two new SRK methods are constructed in this paper. They are explicit and semi–implicit SRK methods of strong global order 1 with minimum principal error coefficients. The stability properties and numerical results show the effectiveness of these methods by prsenting some numerical results.

Mathematics Subject Classification: 60H10, 65L06, 65L20.
Keywords: Stochastic differential equations, Runge–Kutta methods, Numerical stability.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Comparison numerical simulation of stochastic differential equation with white and colored noise in ship heave motion

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Abstract

Modeling of ship heave motion in still waters by ordinary differential equations ignores stochastic effects. By adding random elements into the differential equations, a system of stochastic differential equations (SDEs) arises which can describe the ship motion in irregular waves. This paper compares the numerical solution of stochastic differential equation for ship heave motion with white and colored noise. For this purpose the deterministic model is replaced by stochastic models by adding a noise term in force, and then these models will be solved analytically and numerically. Finally by giving an example the comparison between white and colored noise will be presented.

Mathematics Subject Classification: 60H10, 60H35.
Keywords: Stochastic differential equation, White noise, Color noise, ship heave motion.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

On Fuglede–Putnam type theorems

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P. O. Box 1159, Mashhad 91775, Iran, Tusi Mathematical
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Abstract

Let $A, B, X \in \mathbf{B}(\mathcal{H})$ for some complex Hilbert space $\mathcal{H}$ and $\tilde{A}$ denote the Aluthge transformation of A. Then $AX = XB$ implies $\tilde{A}X = X\tilde{B}$, whenever it implies that $A^*X = XB^*$. We show that if A, B^* are log-hyponormal and $\tilde{A}X = X\tilde{B}$ then $AX = XB$. If $A = U|A|$ be the polar decomposition of A, $U|A|^{\frac{1}{2}} \geq a \geq 0$ and X is an operator such that $U^*X = XU$, then we prove that $\|\tilde{A}^*X - X\tilde{A}\|_p \geq 2a\||A|^{\frac{1}{2}}X - X|A|^{\frac{1}{2}}\|_p$.

Mathematics Subject Classification: Primary 47B20, Secondary 47B15, 47A30.

Keywords: Fuglede–Putnam theorem, Aluthge transformation, norm inequality, hyponormal, log-hyponormal, p-hyponormal, polar decomposition, Schatten p-norm.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Properties of G-frames

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Mohaghegh Ardabili, P. O. Box 179, Ardabil, Iran.

Abstract

We give some properties of g-frames in Hilbert spaces.

Mathematics Subject Classification: 42C15, 46C05, 47B10.

Keywords: frame, g-frame, dual g-frame, Parseval g-frame, g-frame approximation.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Numerical solution of Volterra-Fredholm integral equations by using CAS wavelets

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Abstract

In this paper, first we introduce CAS wavelets and approximate functions by using them, then we use CAS wavelets as a collocation bases to change the Volterra-Fredholm integral equations to a system of algebraic equations. Finally, some numerical examples illustrate the efficiency of this method.

Mathematics Subject Classification: 65RXX, 33F05, 65LXX.
Keywords: integral equation, CAS wavelets, Operational matrix.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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stability and Hopf bifurcation for a delayed logistic population model

M. Najafi [1]

K. Ghanbari

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Abstract

In this paper the dynamics of a logistic equation with discrete delay are investigated, together with the local and global stability of the equilibria. In particular, the conditions under which a sequence of Hopf bifurcations occur at the positive equilibrium are obtained. Explicit algorithm for determining the stability of the bifurcating periodic solutions and the direction of the Hopf are derived. Global existence of periodic solutions is also established by using a global Hopf bifurcation result.

Mathematics Subject Classification: 37F45, 37G15.

Keywords: Logistic, Bifurcation, delayed, Population

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Numerical Solution of Nonlinear Volterra Integral Equations Using a Quadratically Convergent Iterative Scheme

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Department of Mathematics, Iran University of Science and Technology, Narmak, Tehran 16846 13114, Iran

Abstract

The iterations of the quasilinear technique when is employed to the nonlinear volterra integral equations, are expressed as linear integral equations. The solutions of these linear equations are approximated using one-step collocation method that is carried out on the Chebyshev nodes. Combining these numerical solutions and iterations of the quasilinear technique yields an approximation solution to the nonlinear integral equation. The convergence is considered and some numerical examples confirm the accuracy of the solution.

Mathematics Subject Classification: 45D05, 65L60.
Keywords: Integral equations, Quasilinear technique, one-step collocation method.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

STABILIZERS AND ANNIHILATORS IN BCK-ALGEBRAS

Ardavan Najafi

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,Behbehan,Iran.

Abstract

in this paper, we introduce the notion of stabilizers and annihilators on a BCK-algebra and compareable its properties.

Keywords: BCK-algebra, Stabilizer,Annihilator.

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12-15 September 2010, University of Urmia, Urmia-Iran

SPECIAL WEYL PROJECTIVE CURVATURE ON FINSLER MANIFOLDS

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Tehran, Iran.

Abstract

Finsler metrics are a natural generalization of Rie- mannian metrics. Some theorems from Riemannian world have been extended to Finslerian one. But, celebrated Beltrami the- orem asserting that a Rimannian manifold is projectively at if and only if it is of constant curvature, is no longer true for generic Finsler manifolds. Here, we state and prove a Beltrami type theo- rem for Finsler manifolds, using the notion C-projectively at.

Mathematics Subject Classification: Primary 58E20.
Keywords: Inequality.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Some results on non-existence of t-$(v, t+1)$ latin trades

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Department of Mathematics, Zanjan University,
P. O. Box 313, Zanjan, Iran.

Abstract

Latin bitrades have been introduced in connection to Latin squares. In recent years this concept has been generalized and Latintradestvk are defined. In this talk we study the spectrum (that is, the set of allowable volumes) of t-$(v, t+1)$ Latin trades, $S(t, t+1)$, and present some new results on non-existence of Latintradestvt $+ 1$.

Mathematics Subject Classification: 05B15.

Keywords: Latin bitrade, t-Latin trade, Spectrum.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

on pointwise multipliers of modulation spaces

Ghassem Narimani [1]

Abstract

It is proved that any function in the Wiener amalgam space $W(H^s_p(\mathbf{R^d}), \ell_\infty)$ is a pointwise multiplier for modulation spaces $M^r_{p,q}(\mathbf{R^d})$ whenever $1 \leq p, q \leq \infty$ and $s > |r| + d$.

Mathematics Subject Classification: 26D10, 46E25, 42B25.

Keywords: modulation space, pointwise multiplier, Bessel potential spaces, Wiener amalgam spaces

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Solution of Integral Equation System by Using Wavelet Galerkin Method

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M. Nosrati Sahlan[1]

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Narmak, Tehran 16846 13114, Iran.

P. Torabi

Iran University of Science & Technology
Narmak, Tehran 16846 13114, Iran.

Abstract

In this paper, we propose the cubic semiorthogonal compactly supported B-spline wavelets as basis functions for the efficient solution of the system of Fredholm integral equations. The method is computationally attractive, and applications are demonstrated through illustrative example.

Mathematics Subject Classification: 65C30, 65D07, 65L60.

Keywords: system of integral equations, Galerkin method, B-spline wavelets.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

PRIMARY TORSION MODULES OVER ONE DIMENSIONAL DOMAINS

F. Shahsavar

M. Nazari[1]

H. Fazaeli

Abstract

Throughout this paper, we consider only commutative rings with identity and modules which are unitary. In this paper it is shown that if M is a primary torsion module over one dimensional domain R, then $\theta(M) = R$ or $\theta(M) = ann(M) = ann(rm)$ in which $\theta(M) = \sum_{m\in M}(Rm : M)$. Moreover if M is also projective, then $\bigcap_{IM\neq 0} = R$ or $\bigcap_{IM\neq 0} = 0$.

Mathematics Subject Classification: Primary 13C05, Secondary 13C13.

Keywords: Multiplication module, Primary Module,Torsion module.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A modified preconditioned AOR iterative method for L-matrices

A. M. Nazari [1]

S. Zia Borujeni

Department of Mathematics, University of Arak,
P.O. Box 38156, Iran

Abstract

In recent years, a number preconditioners have been applied to solving of L-matrices with AOR method (see [1]). In this paper we use $(I + S'_\alpha)$ instead of $(I + S_\alpha)$ comprised with H.Wang's precondition [1] and obtain better convergence rate. A numerical example is also show that our preconditioner has the best convergence rate.

Mathematics Subject Classification: 34A30, 65F10

Keywords: Preconditioning, Week regular splitting, L-matrix, AOR method.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Characterizations of Continuous G-Frame in Hilbert C^*-Modules

Akbar Nazari, Mehdi Rashedi

Shahid Bahonar University,
Kerman, Iran.

Mathematics Subject Classification: Primery 41A58, Secondary 42C15, 46L99, 47A05.

Keywords: Continuous g-frame, Frame, Hilbert C^*-module.

Abstract of 41st Annual Iranian Mathematics Conference
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Helix submanifolds in a Lorentzian space

M. Nazari[1]

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R. Mirzaie

Department of Mathematics, I. Kh. International University, P. O. Box 31494-288, Qazvin, IRAN.

Abstract

Recently A.J. Di scala and G. Ruiz-Hernandez studied helix submanifolds of Euclidean space R^n . An interesting motivation for the study of helix hypersurfaces comes from the physics of interfaces of liquid cristals. In this paper we generalize the concept of helix submanifolds to Lorentzian space L^n (vector space R^n endowed with the Lorentzian scalar product defined by $\langle X, Y\rangle = x_1y_1+...+x_{n-1}y_{n-1}-x_ny_n$). We give two methods for construction of the helix hypersurfaces in Lorentzian space L^n. Then we obtain a local characterization of all helix hypersurfaces of L^n. Then by using of eikonal functions as a tool, we study higher codimensional helices in Lorentzian spaces. In fact, we prove a theorem which gives a method to construct helix submanifolds of L^n. Finally we give the main result of this paper, which gives a necessary and sufficient condition for a manifold M to be immersed as a helix in some Lorentzian space.

Mathematics Subject Classification: 53C30, 57S25.

Keywords: Helix sabmanifolds, Eikonal function, Timelike direction.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

C-LIFTING MODULES

M. J. Nematollahi[1]

Abstract

A module M is called *lifting* if every submodule A of M can be written as $A = N \oplus S$ such that N is a direct summand of M and $S \ll M$. Lifting modules generalize projective supplemented modules. We call a module M, C-lifting if every submodule A of M can be written as $A = B + C$ such that B is a direct summand of M and C is a cosingular module. We prove that every right R-module M is C-lifting if and only if every right R-module is the sum of an injective module and a cosingular module.

Mathematics Subject Classification: Primary 16D40, Secondary 16D50.

Keywords: lifting module, co-singular module, projective module, injective module.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

GENERALIZED CENTRAL SERIES OF ABELIAN GROUPS

MOHAMMAD NAGHSHINEH, MOHAMMAD REZA R. MOGHADDAM

Ferdowsi University of Mashhad,
Mashhad, Iran.
Islamic Azad University,
Mashhad Branch, Iran

Abstract

In this paper we try to classify all finite abelian p- groups with multipliers of the same order.

Mathematics Subject Classification: Primary 20D45, 20D25; Secondary 20E34.

Keywords: Autocommutator subgroup, autocentral series, generalized central series.

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A new Algorithm for computing Sagbi-Gröbner Bases

Sajjad Rahmany[1]

School of Mathematics and Computer Science, Damghan University, Damghan, Iran

Abdolali Basiri

Hassan Noori

Abstract

This paper introduces a new efficient algorithm for computing SAGBI-Gr bases for an ideal in a polynomial ring $K[x_1, \cdots, x_n]$ whose polynomials are invariant by the action of a finite group. This algorithm computes successive SAGBI-Gr bases degree by degree. The advantage of this algorithm lies in the fact that it replaces the classical polynomial reduction by the simultaneous reduction of several polynomials in order to avoid as much as possible intermediate computations.

Mathematics Subject Classification: 13P10, 13A50.
Keywords: SAGBI-Gröbner bases, Invariant ring.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A Calculus and Algebra of Functions Derived from Directed Graph Algebras

Kh. Shahbazpour, Mahdihe Nouri

Urmia University,
Urmia, Iran.

Abstract

Shallon invented a means of deriving algebras from graphs, yielding numerous examples of so-called graph algebras with interesting equational properties. Here we study directed graph algebras, derived from directed graphs in the same way that Shallons undirected graph algebras are derived from graphs. Also we will define a new function on graphic plane, that obtained by Cartesian product of two simple graphs pn, that we will say from now the graph function. Next we will discuss algebraic opratoins on graph functions. Finally we suggest a new algebra, the graph function algebra (KM-Algebra), which is very similar to directed graph algebras.

Mathematics Subject Classification: 20D15; Secondary 20E34;
Keywords: Direct Product, Directed Graph, Graph Function, Shallon Algebra, KM-Algebra

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Some results on normal Cayley Graph of abelian groups with Valency Six

Siamak Firouzian

Mostafa Nouri [1]

Abstract

A Cayley graph $\Gamma = Cay(G, S)$ is called *normal* if the right regular representation of G is a normal subgroup of the automorphism group of Γ. In this paper, we give a classification of normal connected undirected Cayley graphs on non-cyclic abelian groups of valency 6.

Mathematics Subject Classification: 05C25,20B25.

Keywords: Cayley graph, Normal edge-transitive, automorphism group.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

solving large-scale linear programming problems

Hamidreza Navidi[1]

Parvin Khosravi

Abstract

The aim of this work is to find an exact least 2-norm solution to a primal constrained linear programming problem in the standard form. More over we can generate an exact solution to the dual programming problem using the exact least 2-norm solution to the primal problem.This hybrid algorithm converges to the correct optimal solution independent of the values of the given starting point. Numerical results for a subset of problems from the *Netlib* collection and a subset of generated large-scale linear programs are given.

Mathematics Subject Classification: Primary 46N10, Secondary 62M45, 90C30.

Keywords: Newton method, strong Wolf conditions, penalty function, least 2-norm solution.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

The Annihilating-Product-One side-Ideal graph

F. Ali Niaei Fard

Department of Mathematics, Isfahan university of technology, P. O. Box 84156-83111, Isfahan, Iran.

Abstract

For a commutative ring R with identity, the annihilating-ideal graph of R, denoted AG(R), is the graph whose vertices are the nonzero annihilating ideal of R with two distinct vertices joined by an edge when the product of the vertices is zero. This article extend the definition of the annihilating ideal graph to non-commutative rings.

Mathematics Subject Classification: 16U99, 05C50, 16S50.
Keywords: The Annihilating-ideal graph , The Annihilating-Product-One side-Ideal graph.

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12-15 September 2010, University of Urmia, Urmia-Iran

Perturbations of regular operators and regular $A-$Fredholm operators between Hilbert C^*-modules Convergent Iterative Scheme

M. forough

A. Niknam [1]

Department of Pure Mathematics,Center of Excellence in Analysis
on Algebraic Structures, Ferdowsi University of Mashhad,
P. O. Box 1159-91775, Mashhad, Iran.

Abstract

This paper is devoted to study perturbations of regular operators and $A-$Fredholm operators. In particular, we show that a compact perturbation of a regular $A-$Fredholm operator is $A-$Fredholm.

Mathematics Subject Classification: Primary 74A55, 46L08, Secondary 47L60, 47A53.

Keywords: Hilbert C^*-modules, regular operator, $A-$Fredholm operators, perturbation.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Optimality Conditions on $C*$-Convex sets

Ismail Nikoufar

Payam noor University,
Malekan, Iran.

Mathematics Subject Classification: 47L07
Keywords: C^*-convex set, C^*-exterme point, $*$-homomorphism.

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12-15 September 2010, University of Urmia, Urmia-Iran

On the entropy rate of ergodic Markov chains

Yari

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Nikooravesh[1]

School of Mathematics, Iran University of Science and Technology, P. O. Box 16846,Tehran, Iran.

Abstract

In this paper an approximation for entropy rate of an ergodic Markov chain via sample path simulation is calculated. It is demonstrated that the estimated Markov chain entropy rate of a sample path not only converges to the correct entropy rate but also does exponentially faster.

Mathematics Subject Classification: Primary 60J10, Secondary 94A17.

Keywords: ergodic Markov chain, entropy rate, estimation, convergence.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Cesaro Supermodular Order and Archimedean Copula

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M. Amini

Dept. of Stat., University of Ferdowsi, Mashhad-Iran.

Abstract

In This paper, we introduce Cesaro supermodular order. For this new order, we show that it almost fulfills all desirable properties of a multivariate positive dependence order. Finally,we consider different issue related extended Archimedean copula and positive dependence.

Mathematics Subject Classification: 60F15.

Keywords: Positive dependent random vectors, Cesaro supermodular order, Archimedean copula.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

on topological interpretation of Baer invariants of groups

Z. Vasagh [1]

H. Mirebrahimi

B. Mashayekhy

Department of Pure Mathematics, Center of Excellence in Analysis on Algebraic Structures, Ferdowsi University of Mashhad, P. O. Box 1159-91775, Mashhad, Iran.

Abstract

In this talk we extend the topological interpretation of nilpotent multipliers of a group G to the Baer invariant of G with respect to an arbitrary variety. Moreover we present a topological proof for the commutativity of Baer invariants with direct limits.

Mathematics Subject Classification: Primary 57M07, Secondary 20J05, 55U10.

Keywords: Baer invariant, Simplicial groups, Moore complex, Variety of groups, Direct limit, Nilpotent multiplier.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A new analytical method to solve Fredholm's integral equations

E. Shivanian

Department of Mathematics, Imam Khomeini International University, Ghazvin 34149-16818,Iran.

H. Vosughi[1]

Department of Mathematics, Faculty of Science, Islamshahr Branch, Islamic AzadUniversity, Islamshahr, Tehran, Iran.

Abstract

This paper shows that the homotopy analysis method (HAM), the well-known method to solve ODEs and PDEs, can be applied as well as to solve linear and nonlinear Fredholm integral equations with high accuracy. Comparison of the present method with Adomian decomposition method (ADM), which is well-known to solve integral equations, reveals that the ADM is only special case of the present method.

Mathematics Subject Classification: 45B05; 45Exx, 45A05.
Keywords: Homotopy analysis method, Fredholm integral equation, Adomian decomposition method

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Submodules Of Multiplication Modules

Rezvan Varmazyar[1]

Department of Mathematics, Islamic Azad University

Abstract

Let R be a commutative ring with identity and M be a unitary R-module. In this paper we consider only multiplication modules, then investigate some properties of submodules of multiplication modules and find some essential results.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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RADIUS OF STARLIKE AND PARTIAL SUM PROPERTY FOR HOLOMORPHIC FUNCTIONS DEFINED BY KOMATU OPERATOR

A. TEHRANCHI, N. VEZVAEI

Islamic Azad University, South Tehran Branch
Tehran, Iran.

Abstract

In this paper we investigate some important properties of a holomorphic functions with negative coefficients by using Komatu operator. We provide necessary and sufficient conditions, radius of starlikeness, convexity and some result for this class.

Mathematics Subject Classification: Primary 30C45.
Keywords: holomorphic, Convex, Starlike functions, Komatu operator.

Abstract of 41st Annual Iranian Mathematics Conference
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Anti-synchronization of the hyperchaotic Qi system and hyperchaotic Lorenz system

V. Vafaei [1]

H. Kheiri

M.R. Moghaddam

Department of Mathematics, University of Tabriz,
P. O. Box 5166614766, Tabriz, Iran.

Abstract

This paper investigates the anti-synchronization problem between hyperchaotic Qi system and hyperchatic Lorenz system. Two different anti-synchronization schemes are proposed. Active control is applied when system parameters are known and adaptive control is employed when system parameters are unknown or uncertain. Based on the Lyapunov stability theorem, controllers and update laws of parameters are designed. Numerical simulations are presented to demonstrate the validity and effectiveness of the proposed methods.

Mathematics Subject Classification: Primary 74H65, Secondary 37N35, 37N30.

Keywords: Anti-synchronization, Uncertain parameter, Hyperchaotic Qi system, Hyperchaotic Lorenz system, Active control, Adaptive control.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Skew polynomial rings over zip rings

E. Hashemi[1]

Abstract

Faith [**?**] called a ring R right zip provided that if the right annihilator $r_R(X)$ of a subset X of R is zero, then $r_R(Y) = 0$ for a finite subset $Y \subseteq X$. In this note first we show that if R is a reversible (α, δ)-compatible ring, then R is right (α, δ)-McCoy. Then we prove that R is right zip if and only if $R[x; \alpha, \delta]$ is right zip, when R is reversible (α, δ)-compatible. Also we give some examples of (α, δ)-compatible rings.

Mathematics Subject Classification: Primary 16D25, 16D60, Secondary 16S34, 16S36.

Keywords: Zip rings, McCoy rings, reversible rings.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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solution of nonlinear cubic-quintic Duffing using Homotopy analysis method(HAM)

M. Hashemi [1]

F. Hemati

A. Hashemi

Abstract

In this paper, we use HAM for periodic solution of nonlinear cubic-quintic Duffing. This method help us to obtain frequency in the form of approximation series of convergence control parameter($\hbar$).

Mathematics Subject Classification: Primary 00X00; Secondary 00X00, 00X00.

Keywords: Homotopy analysis method, nonlinear problems.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Minimizing of energy integral of fractional order via interpolation

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Department of Mathematics, Faculty of Basic Sciences,
Shiraz University of Ttechnology ,
P. O. Box 71555-313,Shiraz, Iran.

S. Jahedi

Department of Mathematics, Faculty of Basic Sciences,
Shiraz University of Ttechnology ,
P. O. Box 71555-313,Shiraz, Iran.

Abstract

We consider existence of a unique surface $f : [0,1]^3 \to \Re$ such that it passes some arbitrary points on the unit cubic domain and minimizes the energy integral of fractional order on $[0,1]^3$. The procedure of finding the solution will also be shown. This generalizes the proposed methods of [1,4].

Mathematics Subject Classification: Primary 41A50, Secondary 42A10, 42A15.

Keywords: Fourier series, Energy integral, Interpolation, Hilbert spaces.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Orthogonal Spline Collocation for Nonlinear Elliptic Boundary Value Problems

J.Rashidinia

School of mathematics, Iran university of science and technology, Tehran, Iran.

R.Yarmohamadi[1]

School of mathematics, Iran university of science and technology, Tehran, Iran.

Abstract

In this study, a general nonlinear elliptic differential equation is considered. The orthogonal spline collocation (OSC) method is used to approximate the solution. At first collocating the differential equation at the so-called Gaussian points then replacing in the equation with a Hermite bicubic spline that vanishes on $\partial\Omega$. The basic advantage of spline collocation methods in comparison with finite element Galerkin methods is the computation of the coefficients of the algebraic equations is faster since no quadratures need to be evaluated. The OSC methods for linear boundary value problems provide optimal order error estimates.

Keywords: Orthogonal spline collocation, Boundary value problem, Gaussian quadrature.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Some results on the bipartite edge frustration of graphs

Z. Yarahmadi[1]

Department of Mathematics, Faculty of Science, Islamic Azad University, Khorramabad Branch Khorramabad, Iran.

A. R. Ashrafi

Department of Mathematics, Faculty of Science, University of Kashan, P. O. Box 87317-51167, Kashan, Iran.

Abstract

The smallest number of edges that have to be deleted from a graph G to obtain a bipartite spanning subgraph is called the bipartite edge frustration of G and denoted by $\varphi(G)$. In this paper we obtain some new results of this quantity.

Mathematics Subject Classification: 05C76, 09E10.

Keywords: Bipartite graph, bipartite edge frustration.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

A weighted algorithm based on variational iteration method for identifying heat transfer coefficient

Kh. Paryab

A.R. Yazdanian [1]

Department of Mathematics, Iran University of Science and Technology, Tehran, Iran.

Abstract

In this paper, we consider an inverse problem of heat equation with Robin boundary condition for identifying heat transfer coefficient. The numerical solution is developed by using a weighted algorithm based on variational iteration method. This method uses initial and boundary conditions simultaneously and effectively for constructing the solution. Using this method a rapid convergent sequence can be obtained which tends to the exact solution of the problem.

Mathematics Subject Classification: Primary 35K05, Secondary 80A23, 35A15.

Keywords: Heat transfer coefficient, Inverse problems, Variational iteration method.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
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PRIME M-IDEALS AND M-PRIME SUBMODULES

M. Behboodi

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F. Yazdi [1]

Department of Mathematics, Isfahan University of Technology, P. O. Box 84156-83111, Isfahan, Iran.

Abstract

Let M be a fixed left R-module. For a left R-module X, we introduce the notion of M-prime (resp. M-semiprime) submodule of X such that in the case $M = R$, which coincides with prime (resp. semiprime) submodule of X. Other concepts encountered in the general theory are M-m-system sets, M-n-system sets, M-prime radical and M-Baer's lower nilradical of modules. Relationships between these concepts and basic properties are established. In particular, we identify certain submodules of M (called "prime M-ideals") that play a role analogous to that of prime (two-sided) ideals in the ring R. Also, we investigate the prime M-ideals, M-prime submodules and M-prime radical of Artinian modules.

Mathematics Subject Classification: Primary 16D80, Secondary 16D99.

Keywords: Prime M-ideal; M-prime submodule; M-m-system set.

[1] speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

Comparison the methods of gauss-quadrature for approximating of integrals involving the Gegenbauer weight-function

H. Derili

Department of Mathematics, Karaj
Branch, Islamic Azad University, Karaj, Iran

F. Yekkehfallah[1]

Department of Mathematics, Karaj
Branch, Islamic Azad University, Karaj, Iran.

Abstract

In this paper, we try by using gauss quadrature formula on the integrals as follows :

$$\int_a^b (1-x^2)^{\lambda-\frac{1}{2}} f(x)dx, \tag{1}$$

where $(1-x^2)^{\lambda-\frac{1}{2}}$, with $\lambda > -\frac{1}{2}$, is the Gegenbauer weight-function, compare the numerical results with Clenshaw - Curtis quadrature [2].The numerical results illustrate the gauss quadratures are better than Clenshaw - Curtis quadrature [2].

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
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Approximate identity in abstract Segal algebras the Gegenbauer weight-function

F. Abtahi

Department of Mathematics, Karaj
Branch, Islamic Azad University, Karaj, Iran

A. Yousofzadeh[1]

Department of Mathematics, Karaj
Branch, Islamic Azad University, Karaj, Iran.

Abstract

Let G be a locally compact group. It has been proved that an abstract Segal algebra with respect to $L^1(G)$ admits a bounded approximate identity if and only if it is a Segal algebra. Hear, we investigate when an abstract Segal algebra with respect to an arbitrary Banach algebra admits a bounded approximate identity.

Mathematics Subject Classification: Primary 46H25, Secondary 43A15.

Keywords: Banach algebras, bounded approximate identities, Segal algebras.

[1]speaker

Abstract of 41st Annual Iranian Mathematics Conference
12-15 September 2010, University of Urmia, Urmia-Iran

SOME PROPERTIES OF HOSOYA AND MERRIFIELD-SIMMONS INDICES OF A GIVEN GRAPH

KH.FATHALIKHANI

H.YOUSEFI-AZARI

Tehran University,
Tehran, Iran.

Abstract

The hosoya index of a graph G,Z(G),is defined as the total number of its matchings,while the Merrifield-Simmons in- dex,i(G),is the total number of independent sets of G.In this pa- per,first we calculate the hosoya index of a special group of trees called'caterpillars'and then find a lower bound for i(G).Finally, we gain some relations between these two indices which are based on a few number of graph functions.

Keywords: hosoya index, Merrifield-Simmons index, k-vertex color- ing, lexicographic product, strong product.

Foreign Speakers

Abstract of 41st Annual Iranian Mathematics Conference
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Differential Subordination For a Class of Univalent Functions

S. Gholizadeh Hamidi and S. Abd Halim

Department of Mathematics
University of Malaya
Malaysia

On Free Action of Semiprime Rings

Mehsin Jabel Atteya and Dalal Ibraheem Resan

Department of Mathematics
Al-Mustansiriyah University-College of Education
Iraq

The Numerical Solution of Partial differential Algebra Equations (PDEs) By Multivariate Pade Approximation

M. Yigider and E. Celik

Deprtment of Mathematics,
Ataturk University, Faculty of Science
Erzincan University, Faculty of Art and Science
Turkey

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Investigation Shape Optimization Problem Using Neural Networks

C. I. Zeynaloy, A. A. Nifityev and K. Majidzadeh

Deprtment of Mathematics,
Baki State University,

On Generalized Derivations With Commutativity of Semiprime Rings

Mehsin Jabel Atteya and Dalal Ibraheem Resan

Department of Mathematics
Al-Mustansiriyah University-College of Education
Iraq

Dual Generalized Quaternions in Spatial KInematics

M. Jafari and Y. Yayli

Deprtment of Mathematics,
Ankara University,
Turkey

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Compact And Cocompact Lattice And m-Adictopology

A. Molkhasi and Mamedov

List of Participants

1	Abbasi	Somayeh	*
2	Abbasi	Naser	*
3	Abbasi	Mahdieh	*
4	Abbasi Shokat Abad	Masoumeh	*
5	Abd Halim	Suzeini	*
6	Abdolali Zadeh	Yousef	
7	Abdollah Pour	Mohammad Reza	*
8	Abdollahi	Alireza	
9	Abedi Zadeh	Fahimeh	*
10	Abkar	Ali	
11	AboAli	Irandokht	*
12	Abolfathi	Mohammad Ali	*
13	Abrishami Moghaddam	Majid	*
14	Adib	Majid	*
15	Adib	Marjan	*
16	Adl Abad	Ali	
17	Aghalari	Rasul	*
18	Aghashiri	Somayeh	*
19	Aghayan	Masoud	*
20	Aghdasi	Elham	*
21	Ahangari	Fatemeh	*
22	Ahmadi	Ghasem	*
23	Ahmadi	Parviz	*
24	Ahmadi Balf	Fatemeh	*
25	Ahmadi Dalir	Karim	*
26	Ahmadi Ladari	Ali Reza	*
27	Ahmadi Tarakameh	Ali	*
28	Ahmadi Varzani	Zahra	*
29	Ahmadian	Davood	*
30	Aim Pour		*
31	Akbari	Majid	
32	Akbari	Zohreh	*
33	Akbari Tootkaboni	Mohammad	*
34	Akbarifard Dastghiri	Farideh	*
35	Akhavan Ghasabzadeh	Fahimeh	*
36	Akhondi Khalkhili	Hasan	*
37	Alaie	Zakieh	
38	Alavi	Roghiyeh	*
39	Aleteymour	Samira	
40	Alhivaz		*
41	Ali Akbari		*
42	Ali Khani	Saied	
43	Ali Mohammadi	Mohsen	*
44	Ali Mohammadi	Roshanak	*
45	Ali Mohammadi	Davood	*
46	Ali Moradi	Mohammad Reza	*
47	Ali Niyaie Fard	Farid	*
48	Ali Panah	Amjad	*
49	Ali Pour Yengeje	Amir	*
50	Ali Reza Mirhosseini	Marziyeh	*
51	Alizadeh	Behrooz	
52	Aman	Masoud	*
53	Amin Ghafari	Mina	*
54	Amini	Behnam	*
55	Amini Dehkharghani	Behnam	*
56	Aminkhah	Mozhgan	*
57	Amiri	Habib	*
58	Amiri	Rama	*
59	Amiri Bashli	Meysam	*
60	Amiri Bideshki	Mohsen	*
61	Amirshekari	Zeynab	*
62	Amjadi	Hanieh	
63	Amoozegar	Samaneh	*
64	Amoozgar	Tayebeh	*
65	Amyari	Maryam	*
66	Ansar	Kheironnesa	*
67	Anvarzade Maraghi	Amin	
68	Arab Tash	Mostafa	*
69	Arasteh	Fatemeh	*
70	Ardin	Nadia	*
71	Arefi Jamal	Ali Akbar	*
72	Ariannezhad	Masoud	*
73	Arjmandfar	Abbas	*
74	Arjmandinia	Parviz	
75	Armandnezhad	Ali	*
76	Armanfar	Samaneh	*
77	Asadi	Fatemeh	*
78	Asadi	Mohammad Ali	*
79	Asadi	Reza	
80	Asadi Golzar	Ziba	*
81	Asgari	Mohammad Sadegh	
82	Asghari	Mohammad Sadegh	*
83	Asghari	Mohsen	
84	Asgharzadeh	Akbar	*
85	Asgharzadeh	Mohsen	*
86	Ashiani	Akram	*
87	Ashouri	Fatemeh	*
88	Ashrafi	Nahid	*

89	Ashri	Siamak	*
90	Atabaki	Motahhareh	
91	Ataei	Mohammad Javad	*
92	Atari	Maryam	*
93	Atteya	Mehsin Jabel	*
94	Aval	Fatemeh	
95	Avaz Zade	Zakiyeh	*
96	Avaz Zade	Zeinab	*
97	Azad	Azizollah	*
98	Azad	Kobra	
99	Azadi	Ghodratollah	*
100	Azami	Jafar	*
101	Azanchiler	Habib	*
102	Azarpanah	Fariborz	*
103	Azhdari	Parvin	*
104	Azim Pour	Sohrab	
105	Azimi Dezfuli	Maryam	
106	Azizpour	Esmaeil	*
107	Baba Ahmadi Milani	Zahra	*
108	Babaie	Ameneh	*
109	Babazadeh	Elnaz	*
110	Babelian	Esmaeil	
111	Bagheri	Ameneh	*
112	Bagheri	Saied	*
113	Bagheri Kholenjani	Nayereh	*
114	Bagherian	Javad	*
115	Baghershahi	Narges	*
116	Bahrami	Mohammad	*
117	Bahrami Ziabari	Reihaneh	*
118	Bakefayat	Zahra	*
119	Bakhshande	Roohollah	*
120	Bakic	Damir	*
121	Bandpei	Zeynab	*
122	Barani	Ali	*
123	Barooghi Bonab	Fahimeh	*
124	Barsagh	Zohreh	
125	Barzgar	Fatemeh	*
126	Bazargan Lari	Abdolreza	*
127	Bazyar	Mohammad	*
128	Bazyari	Meysam	*
129	Behboudi Asl	Manouchehr	*
130	Behravesh	Houshang	*
131	Behzad	Mehdi	
132	Behzadi	Ali	
133	Beigi Rizi	Zahra	*
134	Beitollahi	Arman	*
135	Biglari Gholilou	Fahimeh	
136	Bohluli	Somayeh	
137	Borhanifar	Abdollah	
138	Bouzhabadi	Reza	*
139	Breaz	Valer Daniel	
140	Celik	Ercan	*
141	Chakoshi	Mahnaz	*
142	Dadipour	Farzad	*
143	Damirchi	Javad	*
144	Dana	Mansour	
145	Danaei	Reza	*
146	Daneshvar	Sahand	*
147	Darabi	Ali	*
148	Darabi	Bayaz	*
149	Darania	Parviz	
150	Darvishzadeh	Mohammad	*
151	Darzi	Rahamt	*
152	Dastjerdi	Mohammad Taghi	*
153	Davoodi Darzi	Mohammad	
154	Davoodi Jedi	Narges	*
155	Dehghan	Hosein	
156	Dehghan	Mohammad Ali	*
157	Dehghan Harati	Ali	*
158	Dehghani Darmian	Mehdi	*
159	Dehghani Tazekand	Eisa	*
160	Dibachi	Hosein	*
161	Dinarvandi	Somayeh	*
162	Dorri	Fatemeh	*
163	Dujella	Andre	*
164	Ebadian	Ali	*
165	Ebrahimi	Akbar	
166	Ebrahimi	Faezeh	*
167	Ebrahimi	Sara	
168	Ebrahimi	Sepideh	*
169	Ebrahimi Vishki	Hamid Reza	*
170	Ebrahimikhah	Hadi	*
171	Edalat Zadeh	Behrooz	*
172	Eghdami	Hosein	*
173	Emami	Mozhgan	*
174	Eram	Zahra	*
175	Esfahani	Amin	*
176	Eskandari	Khadijeh	

177	Eskandari	Rasul	*
178	Eskandarzadeh	Maryam	*
179	Eslahchi	Mohammad Reza	*
180	Eslami	Zeynab	
181	Eslamian	Mohammad	*
182	Esmaeili	Roghayeh	*
183	Esmaeili Fallah	Hajar	*
184	Etebar		*
185	Etefagh	Mina	
186	Ezati	Reza	*
187	Fadayi	Jasem	*
188	Fahimi	Hamed	*
189	Fakhari	Elham	*
190	Fakharzadeh Jahromi	Ali Reza	*
191	Fakheri	Siyamak	
192	Falah Eslamluo	Haniyeh	*
193	Falahati	S	*
194	Falahati Mrost	Somayeh	
195	Falati	Mehdi	*
196	Fallah Gol		*
197	Faraj Zadeh	Ali	*
198	Faramarzi Sales	Asadollah	*
199	Farhad Toski	Zahra	*
200	Fariborzi Araghi	M	*
201	Farnoosh	Rahman	*
202	Farokhi Hersini	Parvaneh	*
203	Farshbaf Moghimi	Mohammad Bagher	
204	Farzi	Maliheh	*
205	Fathali	Jafar	*
206	Fathali Khani	Khadijeh	
207	Fayaz Behroz	Seyedeh Robab	
208	Fayaz Movaghar	Afshin	*
209	Fazeli	Somayeh	*
210	Feyzabadi	Naser	*
211	Feyzollahi Onsorodi	Ebrahim	*
212	Foladi	Hamid	*
213	Forogh	Sodabeh	
214	Forozanfar	Farzaneh	
215	Garshasbi	Morteza	
216	Gashoul	Zahra	*
217	Ghadiri Anari	Maryam	*
218	Ghaemi	Mohammad Reza	*
219	Ghafouri	Asiyeh	*
220	Ghahremani	Hougher	*
221	Ghanbari	Kazem	*
222	Ghani Fara Shahi	Arash	*
223	Gharailoo	Zahra	
224	Ghasem Nejad		*
225	Ghasemi	Maryam	
226	Ghasemi	Mohsen	*
227	Ghasemi Honari	Taher	*
228	Ghasemi Kamalvand	Mojtaba	*
229	Ghasemiyan	Elham	*
230	Ghayekhlou	Somayeh	*
231	Ghazanfari	Bahman	*
232	Ghezelbash	Fatemeh	*
233	Ghobadi pour	Norouz	*
234	Gholam Zadeh	S. Mohammad	
235	Gholami	Gholam Hosein	*
236	Gholami Dokht Haroni	Somayeh	
237	Gholi Nejad Malekshah	Shaban Ali	
238	Gholizadeh Hamidi	S	*
239	Ghorban Zadehivari	Saba	
240	Ghorbani	Mohammad Reza	*
241	Ghorbani	Shokofeh	*
242	Ghorbani	Zahra	*
243	Ghorbani	Maryam	*
244	Gilasi	Farzaneh	*
245	Golchin	Akbar	*
246	Golzarpour	Javad	*
247	Habibi	Parastoo	*
248	Hadadi	M. R	*
249	Hadadi Fard	Fazel	*
250	Hafezieh	Roghayeh	*
251	Haghighatnia	Parisa	*
252	Haghighi	Ahmad Reza	*
253	Haj Abotalebi	Narges	*
254	Haj Sadeghi	Maryam	*
255	Haji Badali	Ali	*
256	Haji Shabani	Mahmood	*
257	Hakamipour	Noushin	*
258	Hakimi Parouch	Mahdieh	*
259	Halimi	Mohammad	*
260	Hamidi	Safoura	
261	Hamzeh Nezhad	Mehdi	*
262	Harizavi	Habib	*
263	Hasani	Hosein	*
264	Hasani	Khadijeh	*

265	Hasanzadeh	Fatemeh	*
266	Hashemi	Ebrahim	*
267	Hashemi Garmdarreh	S. Mohammad Jafar	*
268	Hazrati	Ali Reza	
269	Heidari	Mohammad Taghi	*
270	Heidari	Zohreh	*
271	Hejazi	S. Reza	*
272	Hemmati		*
273	Hemmatian Dehkordi	Parisa	*
274	Hoseini	Mohammad Hossein	*
275	Hoseini	S. Mohammad	*
276	Hoseini	S. Sara	*
277	Hoseini Darbarzi	S. Ghasem	*
278	Hoseinpouri	Mehdi	*
279	Houmi	Behnaz	
280	Houshyar Ghahremanlou	Noushin	*
281	Houshyar Ghahremanlou	Kheirollah	
282	Ilaghi Hoseini	Azadeh	*
283	Irandoust	Safar	*
284	Irandousti		*
285	Irani	Yavar	*
286	Iranmanesh	Anis	*
287	Iranmanesh	Farzad	
288	Iranmanesh	Mehdi	*
289	Iranmanesh	Mohammad Ali	
290	Iranpanah	Nasrollah	*
291	Isvand	Davood	*
292	Ivaz	Karim	
293	Izadi	Javad	*
294	Izadian	Jalaleddin	*
295	Jabbari	Mohammad	
296	Jabbari	Mousa	*
297	Jabbarzadeh	Mohammad Reza	*
298	Jaf	Farzaneh	*
299	Jafari	Fatemeh	*
300	Jafari	Hosein	*
301	Jafari	Mehdi	*
302	Jafari	Zeynab	*
303	Jafari	Zohreh	*
304	Jafari Khaledi	Majid	*
305	Jafarian Amiri	Seyed Majid	*
306	Jafariani	Somayeh	*
307	Jahan Panah Bavaryani	Sirus	
308	Jahed Hour	Ramin	*
309	Jahedi	Khadijeh	*
310	Jahedi	Sedigheh	
311	Jalal Zadeh	Leila	*
312	Jalali Pour	Somayeh	*
313	Jalalian	Sahar	*
314	Jalilian	Reza	*
315	Jamali	Hasan	*
316	Jan Nesari		*
317	Javani	Kobra	
318	Javanmard	Farshideh	*
319	Javanmardi	Sara	*
320	Jelodari	Mohammad	
321	Jodeiri Akbarfam	Ali Asghar	*
322	Jokar	Asghar	*
323	Jokar	Mahmood	*
324	Jokar	Zahra	*
325	Kafash Dost	Somayeh	*
326	Kamalgharibi	Hadiseh	*
327	Kamari	Osman	*
328	Kamel Mir Mostafayi	Ali Reza	*
329	Kamrani	Saeid	
330	Kamyabi		
331	Kamyabi Gol	Robab	*
332	Karamali	Gholamreza	*
333	Karamoz	Neda	*
334	Kardost	Mobina	*
335	Karimi	Kobra	*
336	Karimi Jafar beighlou	Saied	*
337	Karimiyan	Saleh	*
338	Kashfi	Mahnaz	*
339	Kazemi	Iraj	*
340	Kazemi	Mohammad Bagher	
341	Kazemi	Manoochehr	*
342	Kazemi Blgshir	Mohammad Bagher	*
343	Kazemi Fard	Ahmad	*
344	Kazemi Pileh Drgh	Adel	
345	Keighobadi	Somayeh	*
346	Keramat lou	Mahmood	*
347	Keshavarz Kohjerdi	Fatemeh	
348	Khademi	Ali	*
349	Khademi	S. Nematollah	*
350	Khademlou	S	*
351	Khaki	Raheleh	*
352	Khalili	Jamal	*

353	Khalili	Valiollah	*
354	Khalili	Yaser	*
355	Khalili	Najib Agha	
356	Khalili	Zakieh	*
357	Khalilzadeh	Rasul	
358	Khame Chi	Pouyan	*
359	Khani	Ali	*
360	Khanjani Shiraz	Rashed	*
361	Khanpouri	Mohammad	
362	Khasteh	Abouzar	*
363	Khatib Zadeh	Hadi	*
364	Khatibi Aghda	Davood	*
365	Khazaeili	Mohammad	*
366	Khazal	Mohammad	
367	Kheibari	Samad	*
368	Kheiri	Hosein	*
369	Khodadadi	Roya	
370	Khojali	Ahmad	*
371	Khojaste Salkouyeh	Davood	*
372	Khosh Nomian	Azam	
373	Khoshnam	Foad	*
374	Khoshnevisan	Azam	
375	Khosravi	Somayeh	*
376	Kiakajouri	Sara	*
377	Komeil	Ali Reza	
378	Komeili	Mojtaba	
379	Kouhi	Maryam	*
380	Kuzucuoglu	Mahmut	*
381	Lalehzari	Reyhaneh	*
382	Lali dastjerdi	Hojatollah	*
383	Lameei	Sanaz	*
384	Lashkaripour	Rahmatollah	*
385	Latifi	Ali	
386	Latifi	Dariush	*
387	Latifi	Masoud	
388	Loghmani	B	*
389	Lotfi Parsa	Morteza	*
390	Mafi	Amir	*
391	Maghsudi	Somayeh	*
392	Mahdavi Amiri	Nezameddin	*
393	Mahdieh Najaf Abadi	Fereshteh	*
394	Mahmood Fakhe	Souran	*
395	Mahmoodi	Eisa	*
396	Mahmoodi	S. Mohammad	*
397	Mahmoodi	Yaghub	
398	Mahmoodian	S.Ebadollah	*
399	Mahmoodian	Somayeh	*
400	Mahmoodvand	Rahim	*
401	Majedi	Somayeh	
402	Majidian	Hasan	*
403	MajidZadeh	K	*
404	Malek Ghayeni	Farid(Mohammad)	*
405	Maleki	Manzar	*
406	Maleknezhad	Khosro	*
407	Mamedov		*
408	Mansuri Kaleibari	Mozhgan	*
409	Mashhadi	Samaneh	*
410	Mashhoudi	Shahed	*
411	Masoudipor	Najmeh	*
412	Masoumi	Mohammad Hossein	*
413	Masouri	Zahra	*
414	Masroori	Naser	*
415	Matinfar	Mashallah	*
416	Mazandarani	Mehran	*
417	Mazloumi	Zahra	*
418	Medghalchi	Ali Reza	
419	Mehdi	Eisa	
420	Mehdipor	Ali	
421	Mehdipour	Mohammad Javad	*
422	Mehdipour Shirayeh	Ali	*
423	Mehrang	Shiva	
424	Mehrdonya	Iraj	
425	Mehrjouie	Ali	
426	Mehrshad	Saeid	*
427	Mehryar	Fatemeh	*
428	Memarzadeh Kermani	Maryam	*
429	Merikh Bayat	Farshad	*
430	Mir Ali Ashrafi	Zeynab	*
431	Mirhossein Khani	Ghasem	*
432	Miri	Mohammad Reza	*
433	Mirshafaei	Seyed Reza	*
434	Mirzapour	Farzollah	*
435	Modallelian	Malihe	*
436	Moeini	Maryam	*
437	Moeini	Mitra	*
438	Mofidi	Hamid Reza	*
439	Moghaddam Far	Ali Reza	*
440	Moghaddasi	Gholam Reza	*

441	Moghimi	Mohammad Bagher	*
442	Moghimian	Mahdieh	*
443	Mohammadalizadeh	Benyamin	*
444	Mohammadalizadeh	Roohollah	*
445	Mohammadi	Eisa	*
446	Mohammadi	Fakhroddin	*
447	Mohammadi	Nasrin	*
448	Mohammadi	Samaneh	*
449	Mohammadi Hasanabadi	Mozhgan	
450	Mohammadi Mosannan	Elham	
451	Mohammadi Motlagh	Nader	
452	Mohammadi Nezhad	Haj Mohammad	*
453	Mohammadikhah	Sadegh	*
454	Mohammadpour	Adel	*
455	Mohammadpour	Afsaneh	*
456	Mohammadpour	Mozhgan	
457	Mohammadpouri	Akram	
458	Mohammadzadeh	Ahmad	
459	Mohammadzadehfar	Samaneh	
460	Mohebi	Hosein	*
461	Mohsen Yari	Ali	
462	Mohtasham	Somayeh	*
463	Mokarram	Reza	*
464	Mokhtari Aghdam	Payam	*
465	Molaei	Habib	*
466	Molkhasi	A	*
467	Molla Haji Aghaie	Mohsen	*
468	Momeni Masuleh	Seyed Hojatollah	*
469	Moradi	Marzieh	*
470	Moradi	Mohammad Reza	*
471	Moradi	Sirus	*
472	Morassaei	Ali	*
473	Motamedi Motlagh	Nader	*
474	Motiei	Samaneh	*
475	Musapour	Mansureh	*
476	Musavi	Nazila	
477	Musavi	Hamid	*
478	Musavi Samar	Mohammad	
479	Musazadeh	Kamran	*
480	Nabardi	Kamran	*
481	Nabati	Parisa	*
482	Nabavi Sales	Seyed Sadegh	*
483	Naderi	Bashir	*
484	Naderi	Masoumeh	
485	Naghshineh Fard	Mohammad	*
486	Najafalizadeh	Saeid	*
487	Najafi	Esmaeil	*
488	Najafi	Marzieh	*
489	Najafi	Mohaddeseh	*
490	Najafi	Seyed Mojtaba	*
491	Najafi Dolatabadi	Ardavan	*
492	Najafi Saghezchi	Behzad	*
493	Najafian	Seyed Mohsen	*
494	Najafzadeh	Shahram	*
495	Najati	Abbas	*
496	Namjo	Mehran	*
497	Namvari Laleh	Roghayeh	
498	Narimani	Ghasem	*
499	Naserian	Javad	*
500	Nasiri	Fahimeh	
501	Nasiri	Jila	*
502	Nasrabadi	Mohammad Mehdi	*
503	Navidi	Hamid Reza	*
504	Nazari	Akbar	*
505	Nazari	Ali Mohammad	*
506	Nazari	Mahboubeh	*
507	Nazari	Mehdi	*
508	Nazemi	Seyed Zahra	*
509	Nazemian	Javad	*
510	Nematollahi	Mohammad Javad	*
511	Nezamdoust	Sajjad	
512	Niftiyev	A. A.	*
513	Nikoofar	Esmaeil	*
514	Nikooravesh	Zohreh	*
515	Nikouie	Moharram	*
516	Nili Sani	Hamid Reza	
517	Nobari	Elham	*
518	Nosrati Sahlan	Monireh	*
519	Nourbakhsh	Mohammad Reza	*
520	Nouri	Hasan	*
521	Nouri	Mahdieh	*
522	Nouri	Zahra	*
523	Nouri Joybari	Mostafa	*
524	Nozari	Azam	*
525	Nozari rad	Razieh	*
526	Omidi	G. R	*
527	Omoomi	Behnaz	
528	Oskuie	Elnaz	*

529	Ostadbashi	Saeid	*
530	Ostadzad	Mohammad Hossein	*
531	Ostovar	Aydin	*
532	Pahlusai	Behnaz	
533	Paknafs	Ali	
534	Panahi	Hanieh	*
535	Panahi	Mehdi	*
536	Panahi	Pari	*
537	Parastar	Hajar	
538	Parvaneh	Foroud	*
539	Parvardeh	Afshin	*
540	Paryab	Khalil	*
541	Pazhouh	Behrouz	
542	Pidni	Fariba	
543	Pir Asghari	M	*
544	Pirmohammadi	Gholamreza	*
545	Pishbin	Marjan	*
546	Pour Amian	Ahmad Reza	
547	Pour Hoseini	Maryam	*
548	Pour Salavati	Nasrollah	*
549	Pourmahmoud	Jafar	*
550	Pourvali	Zahra	*
551	Rabani	Morteza	
552	Rabiei	Ghafar	
553	Raei	Marzieh	
554	Raeiat Pisheh	Shahram	*
555	Rafeie Rad	M	*
556	Rafiei	Masoumeh	*
557	Rafizadeh	Samira	*
558	Rahimi	Asghar	*
559	Rahimkhani	Shima	
560	Rahimpour	Hosein	*
561	Rahmani	Arsalan	*
562	Rahmani	Morteza	*
563	Rahmani	Somayeh	*
564	Rahmati	Mohammad Reza	*
565	Rajabi	Setareh	*
566	Rajabzade Moghadam	Mohammad Reza	*
567	Ramezani	Jafar	
568	Ranjbari	Asghar	*
569	Rashidi	Seyed Salah	*
570	Rashidinia	Jalil	*
571	Rashidpor	Zahra	*
572	Rasuli	Saied	*
573	Ravaie	Soheila	*
574	Razaghi	Fatemeh	
575	Razavi	S. Hamed	
576	Razavi	Asadollah	*
577	Refahi Sheikhani	Amir Hossein	*
578	Reihani Ardabili	Parastoo	*
579	Resan	Dalal ibrahim	*
580	Reza Ali	Esmaeil	
581	Rezaei	Saber	*
582	Rezaei	Zeynab	*
583	Rezaei	Bahman	*
584	Rezaei Kamani		*
585	Rezvan	Mohammad Reza	*
586	Rezvani	Zakieh	*
587	Rishi Tusi	Reyhaneh	
588	Roohani Nasab	Nahid	
589	Roomi	Vahid	*
590	Roosta Pisheh	Pouria	
591	Rostami Bashmani	Majid	*
592	Saberi Najafi	Hashem	*
593	Saberi Nick	M	*
594	Sabet Ghadam	Fatemeh	*
595	Sabori	Sara	*
596	Saddedin	Seifollah	
597	Sadeghi	Hiro	
598	Sadeghi	Akram	
599	Sadigh Behzadi		*
600	Saed Panah	Fardin	*
601	Safa	Hesam	*
602	Safapour	Ahmad	*
603	Safari	Sabriyeh	*
604	Safdari	Ali	*
605	Sahafi	Mohammad Reza	*
606	Sahebi	Manoochehr	*
607	Saied Panah	Fardin	*
608	Saiedi	Ahmad	*
609	Sajjadi	Saba	
610	Sajjadiyan	Mehri	*
611	Sal Moslehiyan	Mohammad	
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