5th Symposium on

"Computational Complexities, Innovations & Solutions"

10-11, May 2010

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5th Symposium on
Computational Complexities, Innovations and Solutions
(CCIS – 2010)

(Moday May 10, 2010)

Session Chair	**Prof. Dr. Vasile Lupulescu**	
11:30 AM - 12:20 PM	Prof. Dr. Arif Kamal	Life Sciences Block
12:20 PM - 12:40 PM	Dr. Sardar Mohib Ali Khan	
12:40 PM - 1:10 PM	Dr. Saifullah	
01:10 PM - 01:30 PM	Dr. Asia Rauf	
01:30 PM - 2:30 PM	Prayer and Lunch Break	
Session Chair	**Prof. Dr. Arif Kamal**	
02:30 PM - 3:10 PM	Dr. M. Jamil Amir	
03:10 PM – 3:30 PM	Ms. Uzma Ahmad	
03:30 PM - 3:50 PM	Ms. Umber Abbas	
03:50 PM - 4:10 PM	Prof. Dr. Vasile Lupulescu	
04:10 PM - 4:40 PM	Tea Break	
04:40 PM- 5:10 PM	Ms. Rehana Ashraf	
05:10 PM- 5:40 PM	Dr. Akhlaq Shamsi	

(Tuesday May 11, 2010)

Session Chair	**Prof. Dr. Barbu Berceanu**	
09:00 AM - 09:30 AM	Dr. Sultan Hussain	Life Sciences Block
09:30 AM - 09:50 AM	Ms. Sadia Arshad	
09:50AM - 10:10 AM	Mr. Nouman A. Khan	
10:10 AM - 10:40 AM	Dr. Muhammad Ashiq	
10:40 AM - 11:10 AM	Dr. Saqib Hussain	
11:10 AM - 11:50 AM	Tea Break	
11:50 AM - 12:20 PM	Mr. Atiq Ur Rehman	
12:20 PM - 1:00 PM	Dr. Afzal Rana	

01:00 PM - 02:30 PM	Lunch Break	
Session Chair	**Prof. Dr. Munir A. Rashid**	
02:30 PM - 03:00 PM	Dr. Asghar Khan	
03:00 PM – 03:20 PM	Mr. Waleed Noor	
03:20 PM - 03:40 PM	Mr. Ateeq Tahir	
03:40 PM - 04:00 PM	Ms Ayesha Asloob	

An Introduction to TechnoMoot

The CIIT is a primer institute imparting education at Bachelor, Masters and PhD levels, covering the disciplines of Computer Sciences, Development Studies, Engineering, Environment Sciences, Management Sciences and Mathematics. As a part of education and in grooming students CIIT organizes and conducts different types of national and international academic activities. In this connection CIIT, ABBOTTABAD is holding its fifth high-Tech national level event consisting of seminars, symposia and exhibitions under the name of TechnoMoot on May 10 and 11, 2010. It is a multidimensional gathering of people from different sciences and technologies.

In 2005 the department also organized One day workshop on Computational and Industrial Mathematics chaired by the well-known Prof. Dr. Q.K. Ghori and three scientists from research organizations shared their knowledge.

A series of Two days symposia on “Computational Complexities, Innovations and Solutions (CCIS)” was held in the department of Mathematics, COMSATS Institute of Information Technology, Abbottabad, under the umbrella of TechnoMoot in 2006, 2007, 2008 and 2009.

The primary objective of the current symposium is to bring together computational scientists from all fields of the traditional sciences, i.e., Mathematics, Physics, Chemistry, Biology, Medicine and all branches of Engineering in order to share methods and ideas to regroup original contributions from these fields.

ABSTRACT

Memorial of Prof. Dr. Q. K. Ghori

Prof. Dr. Syed Arif Kamal
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Abstract:

Prof. Ghori got his basic degree from University of Sindh. He then taught at DJ Government Science, College, Karachi, affiliated with your esteemed university, where he had the honor to teach Dr. Abdul Qadeer Khan, NI (Bar), the renowned nuclear scientist of Pakistan. As faculty member at Quaid-é-Azam University, Islamabad, he supervised MPhil thesis of Mrs. Rashida Fahim, who taught at University of Karachi. At the time of his death he was associated with the COMSATS Institute of information Technology. Almost, every student of mathematics in the entire country has benefited from his classic book on mechanics (taught in BSc).

NEWTON ENTIRE FUNCTIONS
SARDAR MOHIB ALI KHAN

Abstract.
The polynomials of type $u_0 = 1$; $u_n = Q_n$ i=1(X □ _n); n _ 1 where S = f_ng is a sequence of complex numbers are called Newton polynomials. We will construct an algebra by means of Newton polynomials called Newton Interpolating Algebra. The algebra of formal power series is a particular case of this algebra. We will de_ne the entire functions in this newly constructed algebra and discuss its relationship with the classical algebra of entire functions.

Characterization of an intra-regular left almost semi groups by their fuzzy ideals

Tauseef Asif
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Abstract:

In this paper we have introduce fuzzy quasi-ideal and fuzzy left (right, two-sided) ideals in LA-semigroup. We have proved some results related to fuzzy quasi-ideals and fuzzy left (right, two-sided) ideals of an LA-semigroup. Further we characterize an intra-regular LA-semigroup by the properties of their fuzzy ideals.

On Minimal Ideals of Abel-Grassmann's Groupoids

M. Faisal Iqbal
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Abstract:

In this paper we have proved that if L is the minimal left ideal of an AG-groupoid S with left identity e then Lc is also a minimal left ideal of S for all $c \in S$. We have showed that, kernel K (the intersection of all two sided ideals) of S, if it exists, is a simple, and the class sum Σ of all the minimal left ideals of S (containing at least one minimal left ideal) is the kernel K of S. Also we have shown here that in S with left identity e, $Sa^2S=Sa^2$ holds for all $a \in S$. It is proved here that if S contains left identity e and is without nilpotent ideals, then every minimal ideal of S is simple.

SYMMETRIES OF POWER DIGRAPH

S. M. Husnine and Uzma Ahmad

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Abstract:

An iteration directed graph whose set of vertices is $\{0,1,2,...,n-1\}$ and whose set of edges $\{(a,b): a^k \equiv b(\mathrm{mod}\, n)$ is denoted as $G(n,k)$. It is symmetric of order m if we can partition $G(n,k)$ into subgraphs, each containing m isomorphic components. In this paper we extend the results given by Kramer-miller in [1] by finding the necessary and sufficient conditions for $G(n,k)$ to be symmetric of order pq where p and q are odd prime divisors of a square free odd number n.

CHARACTERIZATIONS OF LEFT ALMOST SEMIGROUPS BY THEIR IDEALS

Naveed Ahmad
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Abstract:

LA-semigroups have been studied in many articles in details. In this paper we have proved some results on quasi-ideals and bi-ideals in an LA-semigroup. Further we have characterized an intra-regular LA-semigroup by the properties of its ideals. It has been proved that in an intra-regular LA-semigroup left, right, two-sided, interior, bi-, generalized bi- and quasi-ideals coincide. Further, we have proved that the set of all ideals of an intra-regular LA-semigroup forms a semilattice structure.

Abstract. The aim of this paper is to established the existence of solutions and some properties of set solutions for a class of set di¤erential equations with causal operator in a separable Banach space.

On Taylor's Scraping Problem and Flow of a Sisko Fluid

Dr. Akhlaq Ahmad Shamsi
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Abstract:

The aim of present investigation is to study the properties of a sisko fluid flowing between two intersecting planes. The problem is similar to Taylor's scraping problem for a viscous fluid. The analysis is carried out in detail reflecting the effects of varying the angle of the scraper on the flow. In addition, the tangential and normal stresses are also computed. We have also shown the well known Taylor scraper problem as a special case.

Estimate for the Discrete Time Hedging Error of the American Option on a Dividend-Paying Stock.

Sultan Hussain* and Nasir Rehman**

***COMSATS Institute of Information Technology Abbottabad, Pakistan.**
****Department of Mathematics and Statistics Allama Iqbal Open University H-8, Islamabad, Pakistan.**

Abstract:

This work is devoted to the discrete time hedging of the American option on a dividend-paying stock with a convex payoff, the particular case of which is American call option. Perfect hedging requires continuous trading in time and knowledge of the partial derivative of the value function of the American option in the underlying asset. Neither one can trade continuously in time nor the closed-form expression of the value function of the American option is known.

Several approximation methods have been developed for the calculation of this unknown value function. We justify in this work that having at hand any such nonnegative uniform approximation, it is possible to construct a discrete time hedging strategy the value process of which uniformly approximates the value process of the corresponding continuous time perfect hedging portfolio.

On Decomposition of Abel-Grassmann's Groupoids

Sohail A. Khan

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Abstract:

In this paper, we have defined a relation ρ on an AG-groupoid S as apb if and only if there exists a positive integer n such that $ab^{2n-1}=b^{2n}$ and $ba^{2n-1}=a^{2n}$ for some $x,y\in S$ and have shown that S/ρ is a maximal separative homomorphic image of S. Further we have defined a binary relation η on an AG-groupoid S, and have shown that S/η is a maximal separative semilattice homomorphic image of S. Moreover it has been established that an AG-groupoid S with left identity can be expressed as a semilattice of archimedean AG-groupoids with left identity.

ON MINIMAL FUZZY IDEALS OF ABEL-GRASSMANN'S GROUPOIDS

M. Nouman Aslam Khan
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Abstract:

This paper dealt with the minimal fuzzy ideals of an AG-groupoid. The relationship amongst fuzzy kernel, fuzzy simple AG-groupoid, and minimal fuzzy ideals are discussed. It has been shown that the minimal fuzzy ideal of an AG-groupoid with left identity is a fuzzy kernel where fuzzy kernel becomes a fuzzy simple AG-groupoid. The possible representation of minimal fuzzy ideals of an AG-groupoid is shown. It has been shown that the union of all minimal fuzzy left ideals of an AG-groupoid constitutes the fuzzy kernel. Every fuzzy left ideal contains at least one minimal fuzzy left ideal which is basically the fuzzy left simple sub-structure and has been shown that every minimal fuzzy left ideal of an AG-groupoid with left identity contains in some fuzzy ideal. The definition of fuzzy left ideals and of fuzzy kernel of an AG-groupoid coincide in the existence of left identity. The sufficient condition of fuzzy ideal to be fuzzy simple is shown. The relationship between the minimal fuzzy left and minimal fuzzy right ideals is established. The necessary and sufficient condition of fuzzy simple AG-groupoid is shown.

PARAMETRIZATION OF ACTIONS OF A SUBGROUP OF THE MODULAR GROUP

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Abstract:

Professor Graham Higman proposed the problem of parametrization of actions of the extended Modular Group PGL(2,Z) on the projective line over F_{q}. The problem was solved by Q. Mushtaq. In this paper, we take up the problem and parametrize the actions of $<u,v,t:u^3=v^3=t^2=(ut)^2=(vt)^2=1>$ on the projective line over finite Galois fields.

Keywords: Linear-fractional transformations, Non-degenerate homomorphisms, Conjugacy classes, Parametrization, and Projective line.

Some new classes of analytic functions related with generalized Janowski functions

Saqib Hussain, Imran Zulfiqar Cheema

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Abstract:

Recently, Noor [Noor, Khalida Inayat(2009).Applications of certain operators to the classes related with generalized Janowski functions., Integral Transforms and Special Functions, , First published on: 24 November 2009 (i First)], introduced certain new classes of analytic functions using newly defined convolution operators. The purpose of this paper is to extend the work of Noor by considering some new classes of analytic functions. We derive some inclusion relationships and a radius problem. Some other properties are also discussed.

CHARACTERIZATIONS OF REGULAR ORDERED SEMIGROUPS BY THE PROPERTIES OF THEIR (_; _)-FUZZY GENERALIZED BI-IDEALS

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Abstract:
Using the idea of a quasi-coincedence of a fuzzy point with a fuzzy set, the concept of an (in_;in orquasi)-fuzzy generalized bi-ideal in ordered Semigroups is introduced, which is a generalization of the concept of a fuzzy generalized bi-ideal of an ordered semigroup. Using this concept, some characterization theorems are provided. A special concentration is given to (2; 2 _q)-fuzzy generalized bi-ideals in ordered semigroups. The upper/lower parts of an (2 ; 2 _q) fuzzy generalized bi-ideals are introduced and the characterizations of regular ordered semigroups are given.

MACROSCOPIC ANALYSIS OF FLOW THROUGH A POROUS MEDIUM BETWEEN TWO PARALLEL PLATES WITH SLIP BOUNDARY CONDITIONS

S. Sadiq, A.M.Siddiqui, T.Haroon
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Abbottabad, Pakistan

Abstract:

Fully-developed, incompressible, steady flow of viscous fluid between two dimensional straight channel with slip conditions between fluid and the plates is considered in an attempt to study the effects of the porous medium and slip boundary conditions on the velocity profiles, for different flow driving mechanisms. By comparison, flows through free space in the same configuration, as governed by Navier- Stokes equations are subject to the different entry profiles. We study the different models. The graphs of various velocity profiles are obtained. The velocity and volume flow have been calculated. Flow properties of flow in porous medium are compared with the properties in the case of free space media and we have come to a conclusion that velocity, and flux decreases in the case of porous medium.

ON ABEL GRASSMANN`S GROUPOIDS DEFINED BY VECTOR SPACES

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Abstract:

In this paper we have defined AG-groupoids over vector spaces and discussed the porperties of these AG-groupoids.