GENERATION OF GENERALIZED MAGNETO-THERMOELASTIC WAVES BY THERMAL SHOCK IN A HALF-SPACE OF FINITE CONDUCTIVITY

Magdy A. Ezzat, Hamdy M. Youssef

In this work, we have solved a problem of generalized thermoelasticity with one relaxation time of a half-space conducting medium taking into account a constant magnetic field acts normal to the bounding plane. Laplace transforms and Fourier transforms techniques are used to get the solution. The resulting formulation is used to solve a specific problem when the bounding surface of the half-space is taken to be traction free and subjected to a constant thermal shock. The free space bounding to the medium has no any magnetic or electrical field. The inverses of Fourier transforms are obtained analytically. Laplace transforms are obtained using the complex inversion formula of the transform together with Fourier expansion techniques. Numerical results for the temperature, stress, displacement, induced magnetic and electric fields are represented graphically. A comparison was made with the results obtained in the absence of a magnetic field.

APPROXIMATION SCHEME IN A BANACH SPACE WITH DECOMPOSITION

Nashat Faried, Zeinab Abd El-Kader, Mohamed Said

We construct an approximation scheme in any Banach space with decomposition. By means of this approximation scheme, we give a definition of approximation numbers for its elements and study their properties. We also study some properties of a subclass of compact sets of type ℓ^P whose sequence of diameters of their projections on the decomposing subspaces is p-summable. Certain characterizations of the space S^P of elements of type ℓ^P whose sequence of approximation numbers is p-summable have been obtained.

WEIGHTED H^1 SPACES ESTIMATES FOR COMMUTATORS OF LITTLEWOOD-PALEY OPERATORS

Liu Lanzhe

We show the boundedness for the commutator of Littlewood-Paley operator on some weighted H^1 space.

OSCILLATIONS OF SECOND ORDER NONLINEAR NEUTRAL DIFFERENTIAL EQUATIONS

Jiaowan Luo, Zhicheng Wang

Consider the second order neutral delay differential equation

$$\text{(E)} \qquad [a(t)(x(t) + p(t)x(t - \tau))']' + q(t)f(x(t - \sigma)) = 0,$$

where $t \geq t_0$, τ and σ are nonnegative constants, $a, p, q \in C([t_0, \infty), R)$ and $f \in C(R, R)$. Some new oscillation conditions for Eq.(E) are presented.

ON CERTAIN RELATION CONNECTING MOCK-THETA FUNCTIONS

Remy Y. Denis, S.N. Singh, S.P. Singh

In this paper, making use of certain known series identities, an attempt has been made to establish relationship connecting two mock-theta functions of arbitrary orders where each mock-theta partial mock-theta function is on a different base.

CATEGORY OF MV-ALGEBRAS
R.A. Borzooei, S. Kaviani, M.M. Zahedi

In this manuscript first by considering the notion of MV-algebra, we define the category of MV-algebras. After that we show that in this category, coequalizer, equalizer and product exist. Moreover, we show that the initial object in this category always exists but there is not a terminal object with 2, 3, 4 or 5 element in this category.

ON HYPERMODULES AND THEIR NORMAL HOMOMORPHISMS
V.M. Gontineac

We deal only with hyperrings of Krasner type. We will give a slightly different definition for hypermodules in order to obtain, as usual for the Abelian groups' theory, that every canonical hypergroup is a $\mathbb{Z}$–hypermodule and we shall study some properties of them, and their normal homomorphisms.

MAXIMAL ELEMENTS FOR BINARY RELATIONS ON COMPACT SPACES
Athanasios Andrikopoulos, Panayiotis Vafeas

In this paper we give necessary and sufficient continuity conditions for the existence of maximal elements for a binary relation defined on a compact set.

TRANSIENT HYDROMAGNETIC FLOW OF A DUSTY FLUID BETWEEN PARALLEL PLATES WITH ION SLIP AND HEAT TRANSFER
Hazem A. Attia

The transient Hartmann flow with heat transfer of a dusty viscous incompressible electrically conducting fluid under the influence of an applied uniform magnetic field is studied without neglecting the ion slip. The parallel plates are assumed to be porous and subjected to a uniform suction from above and injection from below while the fluid is acted upon by a constant horizontal pressure gradient. The equations of motion are solved analytically to yield the velocity distribution for both the fluid and dust particles as functions of space and time, while the energy equations, which include the viscous and Joule dissipation terms, are solved numerically to yield the temperature distributions.

GENERALIZED GROUPS ISOMORPHISM'S THEOREMS
M. Alizadeh, F. Omidi

A generalized group is a semi-group where each element of it has a special identity element and also a special inverse element. In this paper we are going to consider isomorphism theorems in generalized groups. We will also deduce the condition which implies that the multiplication of two generalized sub-groups is a generalized subgroup.

GENERATING FUNCTIONS FOR PARTIAL MOCK-THETA FUNCTIONS
Shyamli Gupta

In this paper we make use of a known identity to establish generating functions for partial mock–theta functions.

ON M-RINGS
A. Hoseini

In this paper a special class of generalized rings entitled normal generalized rings are considered. New basic results on generalized rings are proved. By use of these results it is proved that every generalized ring is an M-ring if and only if it is a normal generalized ring.

ON BAYESIAN APPROACH TO FUZZY HYPOTHESES TESTING WITH FUZZY DATA
S.M. Taheri, J. Behboodian

We study some limitations of exact hypotheses, and review some aspects on alternative procedures. Then, using fuzzy set theory for formulation of non-precise hypotheses, and vague information, we study the problem of fuzzy hypotheses testing when observations are vague. We present a Bayesian approach to this problem. We compare our method with works in this topic and illustrate some advantages of ours. Some theoretic and applied examples are presented.

IMPLICATIVE HYPER K-ALGEBRAS
M.M. Zahedi, A. Borumand Saeid, R.A. Borzooei

In this note first we define the notions of (weak, strong) implicative hyper K-algebras. Then we show by examples that these notions are different. After that we state and prove some theorems which determine the relationship between these notions and (weak) hyper K-ideals. Also we obtain some relations between these notions and (weak) implicative hyper K-ideals. Finally we study the implicative hyper K-algebras of order 3, in particular we obtain a relationship between the positive implicative hyper K-algebras and (weak, strong) implicative hyper K-algebras under the simple condition.

UNIVERSAL ALGORITHM FOR SOLVING FUZZY RELATIONAL EQUATIONS
K. Peeva

Analytical methods and procedures for inverse problem resolution of fuzzy linear systems of equations and fuzzy relational equations in case of max-min composition are proposed. Solvability criteria are proved. Universal algorithm for solving fuzzy linear systems of equations and fuzzy relational equations is given. When the system is consistent, its complete solution set is determined. In case of inconsistency, the equations that can not be satisfied are obtained.

A METHOD FOR COMPUTATION RELATIVE TOPOLOGICAL ENTROPY
M.R. Molaei, M.R. Hoseini Anvari

In this paper the notion of the observer in topology by using fuzzy sets is studied. By considering the notion of relative strong generators a special kind of covers for calculation the relative topological entropy for a relative semi-dynamical system is deduced.

ON A CLASS OF TRIPLE INTEGRAL EQUATIONS INVOLVING TRIGONO–METRICAL COSINE FUNCTIONS AS A KERNEL AND ITS APPLICATION
B.M. Singh, J. Rokne, R.S. Dhaliwal

The solution of triple integral equations involving cosine functions as a kernel with a weight function is obtained in the form of a Fredholm integral equation of the second kind, which can be solved numerically. The solutions of particular cases of triple integral equations are obtained in closed forms and finally as an application of triple integral equations a two-dimensional electrostatic problem is discussed.

AN INVERSE PROBLEM OF HEAT EQUATION

A. Shidfar, G.R. Karamali, K. Tavakoli

In this paper, we consider an inverse problem of linear heat equation with nonlinear boundary condition. we identify the temperature and the unknown radiation term from an overspecified condition on the boundary.

EISENBUD–GOTO CONJECTURE FOR CERTAIN RINGS OF MONOMIAL CURVES

Marilena Crupi, Rosanna Utano

In this paper we prove the Eisenbud-Goto conjecture for classes of simplicial semigroup rings which arise from some special sequences of positive integers.

PANORAMA OF PSEUDO-KUMMER FIELDS AND CLASS FIELD THEORY (I)

Ahmed Asimi, Aboubakr Lbekkouri

Class field theory is one of the most remarkable and important theories in number theory. One of its remarkable aspects is that it predicts the existence of unramified cyclic extensions of a number field, via the knowledge of its class group (Takagi existence theorem).

In this paper we focus on fields of type $\mathbb{Q}\left(\sqrt{d}, u^{1/N}\right)$ (called pseudo-Kummer fields); for which we establish propositions that link the existence of such unramified cyclic extensions to the integers d, N and u. This study leads us to investigate the arithmetic of the pseudo-Kummer fields; and later solving some norm equations (in a subsequent paper).

PERIODIC SOLUTIONS OF A NONLINEAR SYSTEM

Maurizio Badii

By applying a result of Browder, we obtain the existence of weak periodic solutions for a nonlinear parabolic–elliptic system proposed as a model for a conductor in which both heat conduction and electrical conduction take place.