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CONTENTS

Artion Kashuri and Rozana Liko

SOME NEW HERMITE-HADAMARD-FEJÉR TYPE INEQUALITIES VIA k -FRACTIONAL INTEGRALS CONCERNING DIFFERENTIABLE GENERALIZED- \mathbf{m} - $((h_1^p, h_2^q); (\eta_1, \eta_2))$ -CONVEX MAPPINGS 1-24

Abstract: The authors discover a new identity concerning differentiable mappings defined on \mathbf{m} -invex set via k -fractional integrals. By using the obtained identity as an auxiliary result, some new estimates with respect to Hermite-Hadamard-Fejér type inequalities via k -fractional integrals for generalized- \mathbf{m} - $((h_1^p, h_2^q); (\eta_1, \eta_2))$ -convex mappings are presented. It is pointed out that some new special cases can be deduced from main results. Also these inequalities have some connections with known integral inequalities. At the end, some applications to special means for different positive real numbers are provided as well.

Dibyendu Banerjee and Simul Sarkar

A NOTE ON $(p, q)^{th}$ RELATIVE GOL'DBERG ORDER OF ENTIRE FUNCTIONS OF SEVERAL VARIABLES 25-37

Abstract: Considering the idea of $(p, q)^{th}$ relative Gol'dberg order of entire functions of several complex variables in this paper we extend the recent results of Prajapati and Rastogi [4] on the idea of p^{th} Gol'dberg relative order to $(p, q)^{th}$ relative Gol'dberg order.

H. Khabazian

ELIMINATOR SUBMODULES 39-69

Abstract: In [10], for a class \mathcal{G} of subgroups of an additive group, we investigated \mathcal{G} -organized additive groups and we presented some applications. In this paper, for a class \mathcal{F} of subgroups, we introduce a subclass \mathcal{G} of the class \mathcal{F} and show that every \mathcal{F} -cute additive group is \mathcal{G} -organized. Then eliminator submodules [11] (submodules N of the module M_R such that for every finite subset A of N , $\text{ann}_M(\text{ann}_R(A)) \subseteq N$) are investigated and as an example, we show that every module is $\mathbb{E}\mathbb{M}$ -cute.

Daniel A. Romano

Γ -SEMIGROUPS WITH APARTNESS 71-83

Abstract: As a generalization of a semigroup, Sen, in 1981, introduced the concept of Γ -semigroups. In this paper we analyze the concept of Γ -semigroups with apartness. The logical setting of this article is the Intuitionistic logic and the principled-philosophical environment is the Bishop's constructive algebra orientation. In this algebraic orientation, the concept of apartnesses in sets is a fundamental concept, just as it is the concept of equality in the classical algebra. In addition, we introduce the concepts of

co-ideals in such semigroups and give some properties of the family of such substructures. In addition to introducing the concept of Γ -cocongruences of Γ -semigroup, we also by analyzing the connection between strong extensional homomorphisms of Γ -semigroups and congruences and co-congruences, we prove some assertions in related with co-ideals in such semigroups.

Silvestru Sever Dragomir

SOME FUNCTIONALS ASSOCIATED TO SEMI-INNER PRODUCTS ON COMPLEX BANACH SPACES 85-103

Abstract: In this paper we introduce some functionals that are related to Schwarz's inequality for semi-inner products on complex linear spaces and study their properties such as superadditivity and monotonicity. Applications for particular semi-inner products generated by an element of norm one in Banach spaces as well as for some bounded operators that satisfy a Schwarz's type condition are given. Some suggestive examples in the case of complex Hilbert spaces are also provided.

Vasil G. Angelov

TRANSVERSE ELECTROMAGNETIC LOSSY TRANSMISSION LINES TERMINATED BY *RLC*-CIRCUITS WITHOUT HEAVISIDE CONDITION 105-134

Abstract: The paper deals with an analysis of transverse electromagnetic lossy transmission lines terminated by a circuit consisting of linear and nonlinear *RLC*-elements. Using Kirchhoff's law we derive boundary conditions and formulate the mixed problem for hyperbolic system describing the lossy transmission line. Without Heaviside's condition, we cannot guarantee the distortionless propagation of waves and hence we cannot apply the known methods. That is why we apply a different method and obtain conditions for the existence-uniqueness of a generalized solution. Then we reduce the mixed problem to an initial value problem on the boundary. We change variables once again and formulate a mixed problem for the hyperbolic system with respect to the new variables. The nonlinear characteristics of the *RLC*-elements generate nonlinearity in the equations of neutral type on the boundary. Since we are not able to eliminate some transitional currents and voltages we have to consider a system of four equations for four unknown functions. By means of fixed point technique we prove existence-uniqueness of a generalized solution.

Paolo Emilio Ricci, Gabriella Bretti and Pierpaolo Natalini

NEW SETS OF HAHN-TYPE POLYNOMIALS 135-146

Abstract: In recent papers, new sets of Sheffer and Brenke polynomials based on higher order Bell numbers have been studied, and several integer sequences related to them have been introduced. In this article new sets of Sheffer polynomials are derived by introducing a sort of adjointness property. In particular, the adjoint Hahn and the hyperbolic Hahn-type polynomials are studied.
