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CONTENTS

Ingrid Carbone

TROTTER'S TYPE THEOREMS FOR GENERALIZED SZASZ-MIRAKJAN OPERATORS IN POLYNOMIAL WEIGHTED FUNCTION SPACES 1-20

Abstract: We consider the class of degenerate elliptic second order differential operators $Au(x) := \alpha(x)u"(x)(x \geq 0)$ defined in some subspaces of the polynomial weighted function spaces $W_N^0(N \geq 2)$ of all continuous functions u on $[0, +\infty]$ such that $\frac{u(x)}{1+x^N}$ vanishes at infinity, We show that, under suitable hypothesis on the function α, these operators are the generators of C_0-semigroups on W_N^0, that can be represented as limit of powers of discrete-type positive linear operators that have been introduced earlier and are constructed by means of the coefficient α. We also derive some regularity results about these semigroups and, as an application, the solutions of the abstract Cauchy problem related to them. All these results extend the corresponding ones obtained recently in the space W_2^0.

Shaun cooper And Heung Yeung Lam

SUMS OF TWO, FOUR, SIX AND EIGHT SQUARES AND TRIANGULAR NUMBERS: AN ELEMENTARY APPROACH 21-40

Abstract: An elimentary and self contained method is given for determining formulas for the number of representations of an integer as a sum of two, four, six and eight squares or triangular numbers, Our method uses Ramanujan's $|\Psi|$ summation formula and is based on K. Venkatacha liengar's elimentary approach to elliptic functions.

Nawneet Hooda And Babu Ram

CONVERGENCE OF CERTAIN MODIFIED COSINE SUM 41-46

Abstract: In this paper, we generalize the results of Kumari and Ram [4], and Teljakovskii [9] for a more general class of sequences.

M. Imdad And Q. H. Khan

A COMMON FIXED POINT THEOREM FOR SIX MAPPINGS SATISFYING A RATIONAL INEQUALITY 47-57

Abstract: Using notions of compatibility, weak compatability and commutativity, we prove a common fixed point theorem for six mappings satisfying a rational inequality which unifies and improves earlier fixed point theorems due to Fisher Kannan, Hardy-Rogers and others. A related example is also furnished.

Mohammed Imdad And tariq Iqtadar Khan

COINCIDENCE AND COMMON FIXED POINTS OF NONLINEAR HYBRID CONTRACTIONS

59-71

Abstract: IUsing certain weak conditions of commutativity some common fixed point theorems for single-valued mappings and multi-valued mappings satisfying a rational inequality for six mappings are obtained which generalize some earlier results due to Cho et al., Fisher, Diviccaro et al., V. Popa, and others.

M. K. R. S. Veera Kumar

$g^{\#}$-SEMI-CLOSED SETS IN TOPOLOGICAL SPACES 73-87

Abstract: In this paper, we introduce and study a new class of sets, namely $g^{\#}$-semi-closed sets for topological spaces. Applying $g^{\#}$-semi-closed sets, we introduce and study four new classes of spaces, namely ${}^{\#}T_b$ spaces. $T_b^{\#}$ spaces. $T_b^{\#\#}$ spaces $\alpha T_b^{\#}$ spaces. The class of $T_b^{\#}$ spaces (resp. ${}^{\#}T_b$ spaces) is the dual of the class of ${}^{\#}T_b$ spaces (resp. $\alpha T_b^{\#}$ spaces) to the class of T_b spaces (resp. $T\frac{1}{2}$ spaces). We also introduce and study $g\#$ $s-$continuous and $g^{\#}$ s-irresolute maps.

P. N. Natarajan

CHARACTERIZATION OF SOME MATRIX CLASSES 89-94

Abstract: In this paper the matrix classes (bv, Q) and (bv_0, Q) are characterized. The present paper is a sequel to [2]. Throughout this paper, entries of infinite matrices and sequences are real or complex numbers. If $A = (a^{nk}), n, k = 0, 1, 2, \dots$ is an infinite matrix and $x = \{x_k\}, k = 0, 1, 2, \dots$ is a given sequence, let

$$(Ax)_n = \sum_{k=0}^{\infty} a_{nk} x_k, n = 0, 1, 2, \dots,$$

where we assume that the series on the right converge. If X, Y are sequence spaces, let (X, Y) denote the class of all infinite matrices $A = (a_{nk})$ such that

$Ax = \{(Ax)_n\} \in Y$ whenever $x = \{x_k\} \in X$. The sequence spaces bv, bv_0 are defined by

$$bv = \big\{x = \big\{x_k\big\} : \sum_{k=0}^{\infty} |x_{k+1} - x_k| < \infty\big\};$$

$bv_0 = bv \cap c_0$,

where

$$c_0 \left\{ x = \{x_k\} : \lim_{k \longrightarrow \infty} x_k = 0 \right\}$$

We recall the following definition from [1]. The sequence space Q " the space of generalized semi-periodic sequences" is defined as follows:(????)

A. A. M. Wasike

Periodic Solutions of a system of delay differential equations 95-117

Abstract: We use a planar analysis approach to show the existance of periodic solutions of the system of delay differential equations $x'(f) = dL[x(t-\tau) - x(t)] + f(x))$,for d,$\tau > 0, La2 \times 2$

Stevo Stevic

A Note On Bounded Sequences Satisfying Linear Inequalities 331-345

Abstract: In this paper we give proof to following theorem: Let $\alpha_i (i = \overline{0, k-1})$ be real, $\sum_{i=0}^{k-1} \alpha_i = 1, P_k(z) = z^k - \alpha^{k-1} - \cdots - \alpha_0$ and let the real sequence (a_n) satisfy the inequality

$$a_{n+k} \leq \alpha_{k-1} a_{n+k-1} + \cdots + \alpha_0 a_n (n \in N).$$

The boundedness of (a_n) implies its convergence if and only if the zeros of the polynomial $P_k(z)$ belong to the set $\mathbf{C}/ \{z : |z| = 1, z \neq 1\}$.

M. K. R. S. Veera Kumar

$\hat{g}$-Locally Closed Sets And $\hat{G}$LC-functions 347-351

Abstract: In this paper $\hat{g}$- locally closed sets and different notions of generalizations of continous functions, namely, $\hat{G}LC-$ continuity, $\hat{G}LC^{*}-$ continuity, $\hat{G}LC^{**}-$ continuity,

$\hat{G}LC-$ irresoluteness, $\hat{G}LC^{*}-$ irresoluteness, $\hat{G}LC^{**}-$ irresoluteness and sub-$\hat{G}LC-$ continuity are introduced for topological spaces along with some of their characterizations and some interrelationships. These notions fall strictly in between the respective notions of generalizations of continous maps introduced by Ganster and Reeilly [8] and Balachandran, sundaram and Maki [3]. Further $\hat{g}-$ submaximal spaces are defined. It is proved that Pasting Lemma holds good for $\hat{G}LC^{**}-$ continuous functions and $\hat{G}LC^{**}-$ irresoluteness functions but not for $\hat{G}LC^{*}-$ continous functions. As an application of $\hat{g}-$ closed sets, we introduce a new seperation axiom T_f which is weaker than both T_h and $T_{\frac{1}{2}}$ axioms.

Norbert Hungerbuhler And Robert Zwahlen

AN ALGEBRAIC METHOD FOR EIGENVALUE PROBLEMS 353-362

Abstract: If for a linear symmetric (unbounded) operator F and a linear operator S holds

$$FSq(F) = Sp(F)$$

on the span of the eigenspaces of F for two polynomials p and q, then S is a raising operator. This means roughly that if $Fy_i = \lambda_{iyi}$ then $yi + 1 := Syi$ is an eigenvector of F with eigenvalue $\lambda_{i+1} = \frac{p(\lambda i)}{p(\lambda i).}$ Also an inverse statement of this kind holds true. We use this technique in oreder to discuss several eigenvalue problems. Similarly, we consider lowering operators T and discuss commutators relations between S and T.

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