

Indian Journal of Mathematics

Volume 31, No. 1, 1989

CONTENTS

E. Savas

SOME SEQUENCE SPACES INVOLVING INVARIANT MEANS 1-8

Abstract: The paper introduces a new sequence space which emerges naturally from the concepts of invariant means. Some inclusion relations, local boundedness, r -convexity and some matrix transformations have been discussed.

M. A. Khan, M. S. Khan and S. Sessa

A COMMON FIXED POINT THEOREM IN BANACH SPACES 9-16

Abstract: We establish a common fixed point theorem for selfmappings, not necessarily commuting, of a closed and convex subset of a Banach space, generalizing a well known result of Greguš

N. N. Nayak and S. P. Mohanty

ON THE NUMBER OF REAL ZEROS OF A CLASS OF RANDOM ALGEBRAIC POLYNOMIALS 17-23

Abstract: In this paper an estimate is given for the lower bound of the number of real zeros of the random algebraic polynomial $\sum_{r=0}^n y_r(u)x^r$, where the $y_r(u)$'s are identically distributed independent random variables lying in the domain of attraction of symmetric proper stable law with exponent $\alpha, 0 < \alpha \leq 2$. Moreover, our estimated measure of the exceptional set does not depend upon n .

S. R. Grace and B. S. Lalli

OSCILLATION AND ASYMPTOTIC BEHAVIOR OF FORCED NONLINEAR DELAY DIFFERENTIAL EQUATIONS 25-29

Abstract: In this paper we present a new criterion for oscillatory and asymptotic behavior of the solution of the forced equation

$$x^{(n)}(t) + q(t) |x[g(t)]|^\alpha \operatorname{sgn} x[g(t)] = e(t), \quad \alpha > 0,$$

where n is even.

A. H. Siddiqi, S. C. Gupta and Ataullah Siddiqi

ON ULTRA m -METRIC SPACES AND NON ARCHIMEDEAN m -NORMED SPACES 32-39

Abstract: Non-archimedean functional analysis has attracted the attention of many mathematicians in the recent years. The aim of the present paper is to introduce the non-Archimedean aspect in the theory of m -metric and m -normed spaces ([1], [2], [3]) and to obtain properties of ultra m -metric spaces and non-archimedean m -normed space. The case $m = 2$ has been studied by Gähler, Siddiqi and Gupta ([4], [5]).

J. Gopala Krishna and I. H. Nagaraja Rao

ON COEFFICIENT EXPRESSIONS AND OPTIMAL RELATIONS AMONG SUM LOWER GROWTH CONCEPTS ASSOCIATED WITH AN ENTIRE POWER SERIES OVER C^k 41-57

Abstract: This paper is continuation of an earlier work (duly referred to below) of the authors which (i) surveyed the extensive literature on certain basic growth theorems and the upper growth concepts, such as the different kinds of (upper) orders and types, associated with an entire function f over C^k , (ii) developed some convexity/linear programming techniques and (iii) carried out a detailed discussion of the basic characterisations of the lower growth concepts associated with such f . This paper makes a further break-through, adopts an algebraic approach, extends results known in the case of one complex variable and discusses coefficient expressions of the concerned sum lower growth concepts. It makes use of the coefficients expressions ultimately to establish certain reductions and the characterising nature of some properties.

K. Vardharajan

THE INCIDENCE RING OF A POSET

59-64

Abstract: In this paper we recall the concept of the incidence ring $I_R(P)$ of a locally finite poset P over a given ring R and determine necessary and sufficient conditions for $I_R(P)$ to be respectively directly finite, Von-neumann regular or unit regular.

N. V. Patel and V. M. Shah

ON THE ORDER OF FOURIER COEFFICIENTS IN LACUNARY FOURIER SERIES 65-71

Abstract: Kennedy [2] studied lacunary Fourier Series whose generating functions are of bounded variation on a subinterval I of $[-\pi, \pi]$. We show that the conclusion of one of his theorems on the order of magnitude of Fourier coefficients of Fourier series remains valid when the function is merely of bounded r -th variation in I .

Sunil Audich

CERTAIN INTEGRAL FORMULAS INVOLVING THE MULTIVARIABLE H -FUNCTION

73-80

Abstract: In this paper we evaluate four finite integrals involving the products of hypergeometric functions of one and two variables with general arguments and Srivastava and Panda's multivariable H -function (c.f. [4], [5]). The integrals evaluated here are quite general in character and (on specializing the parameters of the multivariable H -function) various (known or new) integrals involving elementary functions (or product of several such functions) can be obtained. Some special cases have also been given in the paper.

Hukum Chand Agrawal

ON CERTAIN BASIC HYPERGEOMETRIC FUNCTIONS OF SEVERAL VARIABLES 81-87

Abstract: The present paper deals with the operational representations of certain basic hypergeometric functions of several variables in terms of the operators $\Omega_{x,q}$ and $K_{y,q}$ defined below. Further, these operational representations are used to obtain certain expansions and three-term relations satisfied by these functions.

M. L. Narayan Rao, K. Kuppu Swamy Rao and Vinod Joshi

A TRANSLATION PLANE OF ORDER 49 WITH 48 IDEAL POINTS IN A SINGLE ORBIT

89-97

Abstract: A Translation plane of order 49 is constructed whose translation complement divides the ideal points into three orbits of length 1, 1 and 48. The order of the translation complement is determined and is found to be solvable group of order

S. L. Singh and Virendra

RELATIVE ASYMPTOTIC REGULARITY AND FIXED POINTS

99-104

Abstract: Following Rhoades et al. [11] the notion of relative asymptotic regularity of a sequence in a 2-metric space is introduced and a fixed point theorem for three weakly commuting mappings is proved.
