

**CONTENTS**

**Akrur Behera and Kishore Kumar Dash**

ADAMS COCOMPLETION AND GEOMETRIC SINGULAR  
REALIZATION OF A SPACE 1-9

**Abstract:** Deleanu, Frei and Hilton have developed the notion of generalized Adams completion in a categorical context; they have also suggested the dual notion, namely, the Adams cocompletion of an object in a category. In this paper, by introducing “modulo a Serre class  $\mathcal{C}$  of abelian group” we characterize mod- $\mathcal{C}$  geometric singular realization of a  $CW$ -complex in terms of Adams cocompletion in a suitable category with a suitable set of morphisms.

**Satyanarayana Bhavanari, Syam Prasad Kuncham and  
Venkata Pradeep Kumar Tumurukota**

ON  $IFP$   $N$ -GROUPS AND FUZZY  $IFP$  IDEALS 11-19

**Abstract:** In this paper we introduces the notions of  $IFP$   $N$ -group and fuzzy  $IFP$  ideal, where  $N$  is a zero symmetric right near-ring. For an  $IFP$   $N$ -group  $G$  in which every monogenic  $N$ -subgroup has  $ACCI$ , it is proved that there exists an element  $g \in G$  such that  $(0: g)$  is a prime ideal of  $N$ . We obtained some consequences and presented related examples. We also obtained a result on  $IFP$   $M_n(N)$ -group  $M_n(N)$ , where  $M_n(N)$  is the matrix near-ring. Some interesting result on fuzzy  $IFP$  ideals in

near-rings were also proved.

**T. P. Johnson**

ON LATTICES OF  $L$ -TOPOLOGIES

21-26

**Abstract:** We study the lattice structure of the set of all  $L$ -topologies on a given set  $X$ . It is proved that the lattice of  $L$ -topologies is not complemented. Some other properties of the lattice  $S_{\tau,L}$ , the set of all  $L$ -topologies defined by families of (completely) Scott continuous function on  $X$  are discussed.

**Indrajit Lahiri**

AN ANALOGUE OF THE SECOND MAIN THEOREM OF VECTOR  
MEROMORPHIC FUNCTIONS FOR MOVING TARGETS

27-33

**Abstract:** We prove an analogue of the second main theorem with moving targets for vector meromorphic functions having few poles.

**Liu Lanzhe**

A SHARP ESTIMATE FOR MULTILINEAR LITTLEWOOD-PALEY  
OPERATOR

35-46

**Abstract:** We establish a sharp estimate for multilinear Littlewood-Paley operator. As application, we obtain the weighted norm inequalities and  $L \log L$  type estimate for the multilinear operator.

### Jin-Lin Liu and Shigeyoshi Owa

SOME FAMILIES OF MEROMORPHIC MULTIVALENT FUNCTIONS  
INVOLVING CERTAIN LINER OPERATOR

47-62

**Abstract:** Let  $\sum_p$  denote the class of functions of the form  $f(z) = z^{-p} + \sum_{k=0}^{\infty} a_k z^k$  ( $p \in N = \{1, 2, 3, \dots\}$ ) which are analytic and  $p$ -valent in the punctured disc  $D = \{z : 0 < |z| < 1\}$ . We introduce and study some new families of meromorphic multivalent functions defined by certain linear operator. A number of useful characteristics of functions in these families are obtained. In particular, some properties of neighborhoods of functions in these families are given.

### R. Manjini

SOME CLASSES OF MEROMORPHIC FUNCTIONS WITH POSITIVE  
COEFFICIENTS

63-78

**Abstract:** Let  $\sum_p$  denote the class of functions of the form

$$f(z) = \frac{a_{-1}}{z} + \sum_{m=1}^{\infty} a_m z^m \quad (a_m \geq 0, a_{-1} > 0)$$

which are analytic in the annulus  $D = \{z : 0 < |z| < 1\}$ . Let  $\sum_{p,1}$  and  $\sum_{p,2}$  denote subclasses of  $\sum_p$  satisfying  $f(z_0) = 1/z_0$  and  $f'(z_0) = -1/z_0^2$  ( $-1 < z_0 < 1, z_0 \neq 0$ ), respectively. Properties of some subclasses of  $\sum_{p,1}$  and  $\sum_{p,2}$  are investigated and sharp results are obtained. Also a new characterization for certain subclass of  $\sum_p$  is proved.

**Zoran D. Mitrović**

SIMULTANEOUS APPROXIMATION FOR MULTIVALUED  
MAPPINGS

79-85

**Abstract:** In the paper, some results on simultaneous approximation for convex multivalued mappings are given. These results are generalizations of the Ky Fan best approximation theorem and a generalization of the D. Delbosco results. Some results on coincidence points are also given.

**P. N. Natarajan**

MORE ABOUT  $(\overline{N}, p_n)$  METHODS IN NON-ARCHIMEDEAN  
FIELDS

87-100

**Abstract:** In this paper  $K$  denotes a complete, non-trivially valued, non-archimedean field. Infinite matrices and sequences have entries in  $K$ . We prove some results regarding the  $(\overline{N}, p_n)$  methods of summability or the weighted means in such a field  $K$ , introduced earlier by the author.

**Swadheenananda Pattanayak and Sabita Sahoo**

FRACTIONAL DERIVATIVE OF RANDOM FOURIER-STIELTJES  
SERIES

101-109

**Abstract:** Let  $X(t, w)$  be a symmetric stable process of index  $\alpha, 1 < \alpha \leq 2$  and let  $f \in L^p[0, 2\pi], p \geq \alpha$ . We establish that the series  $\sum \frac{a_n A_n}{(in)^\beta} e^{int}$ , where  $a_n = \frac{1}{2\pi} \int_0^{2\pi} f(t) e^{-int} dt$  and  $A_n = \frac{1}{2\pi} \int_0^{2\pi} e^{-int} dX(t)$  converges in probability to the stochastic integral  $\frac{1}{2\pi} \int_0^{2\pi} f_\beta(t-u) dX(u, w)$ , where  $f_\beta$  is the fractional integral of order  $\beta$  of the function  $f$  for  $\frac{1}{p} < \beta < 1 + \frac{1}{p}$ . We define fractional derivative of the sum  $\sum_{n=-\infty}^{\infty} a_n A_n e^{int}$  of order  $\beta$  for

$a_n$  and  $A_n$  as defined above and  $\frac{1}{p} < 1 - \beta < 1 + \frac{1}{p}$ . A sufficient condition for existence of fractional derivative is then found out.

**Lucyna Rempulska, Mariola Skorupka and Zbigniew Walczak**

ON SOME OPERATORS OF SZÁSZ-MIRAKYAN TYPE

111-128

**Abstract:** We study the degree of approximation of functions from exponential weighted space of functions of one two variables by certain operators of the Szász-Mirakyan type.

**Stevo Stević**

A NOTE ON THE GENERALIZED CESÀRO OPERATOR ON  
BERGMAN SPACES

129-136

**Abstract:** In this note we show that the adjoint operator of the generalized Cesàro operator is bounded on the weighted Bergman spaces  $\mathcal{B}_\alpha^p$  if and only if  $\alpha + 2 < p$ .

\*\*\*\*\*