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ADAMS COCOMPLETION AND GEOMETRIC SINGULAR REALIZATION OF A SPACE

AKRUR BEHERA AND KISHORE KUMAR DASH

(Received 5 April 2003)

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

ON IFP N -GROUPS AND FUZZY IFP IDEALS

SATYANARAYANA BHAVANARI, SYAM PRASAD KUNCHAM AND VENKATA PRADEEP
KUMAR TUMURUKOTA

(Received 24 August 2002 Revised 27 May 2004)

In this paper we introduced 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 example. 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 results on fuzzy IFP ideals in near-rings were also proved.

ON LATTICES OF L -TOPOLOGIES

T. P. JOHONSON

(Received 6 June 2001; Revised 7 April 2003; Re-revised 14 August 2003)

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 $S_{r,L}$, the set of all L -topologies defined by families of (completely) Scott continuous function on X are discussed.

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

INDRAJIT LAHIRI

(*Received* 17 February 2000; *Revised* 19 August 2003)

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

**A SHARP ESTIMATE FOR MULTILINEAR LITTLEWOOD-
PALEY OPERATOR**

LIU LANZHE

(*Received* 9 April 2002)

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.

**SOME FAMILIES OF MEROMORPHIC MULTIVALENT
FUNCTIONS INVOLVING CERTAIN LINEAR OPERATOR**

JIN-LIN LUI AND SHIGEYOSHI OWA

(*Received* 11 September 2002; *Revised* 26 May 2004)

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.

SOME CLASSES OF MEROMORPHIC FUNCTIONS WITH POSITIVE COEFFICIENTS

R. MANJINI

(Received 12 March 2001)

Let \sum_p denote the class of functions of the form

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

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.

SIMULTANEOUS APPROXIMATION FOR MULTIVALUED MAPPINGS

ZORAN D. MITROVIĆ

(Received 20 March 2003; Revised 27 September 2003)

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

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

P. N. NATARAJAN

(Received 18 November 2002; Revised 20 April 2004)

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 (\bar{N}, p_n) methods of summability or the weighted means in such a field K , introduced earlier by the author.

FRACTIONAL DERIVATIVE OF RANDOM FOURIER-STIELTJES SERIES

SWADHEENANANDA PATTANAYAK AND SABITA SAHOO

(Received 24 October 2002 Revised 23 March 2004)

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_β is the fraction integral of order β 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 β 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.

ON SOME OPERATORS OF SZÁSZ-MIRAKYAN TYPE

LUCYNA REMPULSKA, MARIOLA SKORUPKA AND ZBIGNIEW WALCZAK

(Received 23 August 2002; Revised 28 April 2004)

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

A NOTE ON THE GENERALIZED CESÁRO OPERATOR ON BERGMAN SPACES

STEVO STEVIĆ

(Received 17 August 2002; Revised 12 October 2004)

In this note we show that the adjoint operator of the generalized Cesáro operator is bounded on the weighted Bergman spaces β_α^p if and only if $a + 2 < p$.