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CONTENTS

Abstract: In this note we characterize the class of Hilbert spaces that are vector subspaces of the Hardy Space H^2 and on which the shift operator S of "multiplication by z" acts as an isometry. A recent due to $L.$ de Branges is deduced as a corollary to the theorem proved here.

Abstract: Discrete Abel means were introduced by Armitage and Maddox [1], and Tauberian results relating bounded discrete Abel means and partial sums have been given by Maddox [3]. In the present note we consider a Tauberian theorem of a type not considered in [1], [3].

Abstract: A Characterization of composition operators on a space of operators is obtained. It is shown that the class of composition operators derived on the Banach space of bounded linear operators into the Banach space of bounded functions on a Hilbert space H into itself is a Banach space. If $0 \in ran\ T$, then it turns out that no composition operators induced by T is invertible.

Abstract: Jo-Ann D. Cohen (Surjit Singh) has proved that if T is a Hausdorff (need not be Hausdorff) locally bounded ring topology on a Dedekind doamin D for which the open ideals form a fundamental system of neighbourhoods of zero and there exists a non-zero topological nilpotent element for T, then T is normable (seminormable). We now prove that if T is a Hausdorff (need not be Hausdorff) locally bounded ring topology on a Noetherian Krull domain R for which the open divisorial ideals form a fundamental system of neighbourhoods of zero and there exists a non-zero topological nilpotent for T, then T is normable (seminormable).

Abstract: By $S^b(A,B)$ ($b \neq 0$ complex), we denote the class of functions $f(z) = z + \sum_{n=2}^{\infty} \alpha_n z^n$ regular in the unit disc $E = \{z : |z| < 1\}$, such that $f(z)/z \neq 0$ in E and

$$1 + 1/b\,(zf'(z)/f(z) - 1) < \frac{1+Az}{1+Bz},\ z \in E,$$

where A and B are fixed numbers, $-1 \leq B < A \leq 1$. Sharp coefficient estimates and argument of $f(z)/z$ are determined for functions in the class $S^b(A,B)$. Also we maximize $|\alpha_3 - \mu\alpha_2 2|$ over the class $S^b(A,B)$ and the sharp radius of starlikeness is obtained for the class $S^b(A,B)$.

G. C. Mandal, Swapna Mukherjee and Srikumar Mukherjee

Abstract: Here a study of the effects of the dust particles on the fluid flow is done. It is observed that the effect of the mass concentration of dust particles on the flow fluid is to increase the velocity field of dusty fluid. It appears that this problem has some bearing on the problems of transport of solid particles by air or water and the motion of solid particles in a rocket motor exhaust.

Nand Kishore, U. K. Misra and C. D. Panigrahi

Abstract: Herein we have constructed a subclass of the rgular matrix summability methods which has the property that every bounded sequence is limitable by at least one of its menbers. Indeed, this subclass behaves like the class of regular matrix methods in other respects too.

Beverly Diamond

Abstract: A completely regulr Hausdorff space X is a 0-space if X has a compactification with 0-dimensional remainder, in which case X has a maximum compactification F_0X having this property. It is shown that if Y is a 0-space, $f : X \to Y$ is closed and KX is a perfect compatification of X, then f extends continuously to $f^k : KX \to F_0Y$ if and only if for any distinct pair of points $y, z \in Y, cl_k xf \leftarrow (y) \cap cl_k xf \leftarrow (z) = \phi$. It follows from this result that if (i) X is realcompact or metacompact and Y is a 0-space in which the set of q-points has discrete complement, or (ii) X is metacompact or locally compact realcompact and Y is a k-space which is also a 0-space, then any closed map from x into Y extends to a map from any perfect compactification KX of X into F_0Y.

T. K. Dutta

Abstract: It is known [5, 6] that if the first symmetric derivative of a continuous f exists at each point in an interval (a, b) then the ordinary derivative f' also exists in (a,b) except a set of the first category. In this paper we have proved analogous

result for generalised symmetric derivatives of odd and even orders by introducing the notion of uniform upper and lower symmetric derivates

Sunil Kumar Sinha

SOME CHARACTERIZATIONS OF THE EXTENDED HANKEL TRANSFORM FOR DISTRIBUTIONS 75-86

Abstract: Two characterizations of the extended Hankel transforms for distributions have been developed using the transformation of dilatations U_n exponential shifts T^{-p}. The standard operation transformulae for the distributional extended Hankel transform are proved.

Naresh Kumar and G. S. Srivastava

ON THE DERIVATIVES OF A FUNCTION ANALYTIC IN A HALF PLANE 87-97

Abstract: Let $\sum_{n=1}^{\infty} a_n \exp(s\lambda_n)$ be a Dirichlet series whose sum $f(s)$ represents an analytic function in a half plane $Re\, s < A$. It is well know that the derivatives of $f(s)$ namely $f^{(n)}(s)$ are also analytic in the half plane $Re\, s < A$. Im thid paper, various results connecting the growths of $f(s)$ and its derivatives have been obtained. It has been shown that if f is of finite order then the order and lower order of $f^1(s)$ are same as that of $f(s)$. Relative growth of maximum terms of $f(s)$ and $f^n(s)$ have also been studied.

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