BULLETIN OF THE
ALLAHABAD MATHEMATICAL SOCIETY
Vol. 23, Part 2, 2008

CONTENTS

Abstract: We have obtained results analogous to the results of A. Pelczynski and F. Sukochev on the Toeplitz Schure multipliers from the class of upper traingular trace class matrices to the class of absolutely summable matrices. We have obtained a necessary and sufficient condition for the weighted Toeplitz Multiplier $\widetilde{\mathbf{T}}_\lambda$ to induce a bounded linear operator from $\mathcal{S}_1$ into $\mathcal{M}_1$. We have also got a condition for a sequence to be in the Fefferman multiplier class and the corresponding Toeplitz multiplier mapping the upper triangular trace class matrices to the class of absolutely summable matrices.

Abstract: In this paper, we orthonormalize the B-spline functions by Gram-Schmidt algorithm and then use them in solving the linear Fredholm integral equations. We prove the convergence of this method and obtain order of the error. And finally some examples are given to show accuracy of the method.

Abstract: Let $\mathcal{A}_p(n)$ be the class of analytic and multivalent functions $f(z)$ in the open unit disk $\mathbb{U}$. Furthermore, let $\mathcal{S}_p(n,\alpha)$ and $\mathcal{T}_p(n,\alpha)$ be the subclasses of $\mathcal{A}_p(n)$ consisting of multivalent starlike functions $f(z)$ of order α and multivalent convex functions $f(z)$ of order α, respectively. Using the coefficient inequalities for $f(z)$ to be in $\mathcal{S}_p(n,\alpha)$ and $\mathcal{T}_p(n,\alpha)$, new subclasses $\mathcal{S}_p^*(n,\alpha)$ and $\mathcal{T}_p^*(n,\alpha)$ are introduced. Applying Hölder inequality, some interesting properties of generalizations of convolutions (or Hadamard products) for functions $f(z)$ in the classes $\mathcal{S}_p^*(n,\alpha)$ and $\mathcal{T}_p^*(n,\alpha)$ are considered.

Abstract: We begin by studying characterizations of pseudoconvexity, and also of finite type, using analytic discs. The results presented are analogous to well-known ideas from the real variable setting in which "pseudoconvex" is replaced by "convex" and "analytic disc" is replaced by "line segment".

The second part of the paper concerns regularity results for the Kobayashi metric. Of course this metric is defined using analytic discs, so the discussion is a natural extension of that in the first part of the paper. We also comment on the Carathéodory metric.

Abstract: In this paper, we derive certain geometrical properties of the subspaces of a Finsler space whose metric is given by an h-vector.

Abstract: In this paper, we study some more properties of $g\beta$-closed sets. Further we define β-$g\beta$-continuous functions and study it's basic properties. Also we investigate $g\beta$-open sets in a product space of a family of non empty topological spaces and prove that a projection map from the product space onto its factor space is $g\beta$-irresolute.

Abstract: This paper generalizes the notion of left essential spectrum and left Weyl's theorem, when the space is non separable. The concept of left α-Weyl's theorem is introduced and a necessary and sufficient condition is proved for $f(T)$ to satisfy left α-Weyl's theorem when T is a semi isoloid operator and f is in $\mathrm{Hol}(T)$.

Abstract: In this paper, we primarily study the set of statistical cluster points of double sequences in finite dimensional spaces. We also extend the notion of Γ-statistical convergence of single sequences [7] to double sequences and investigate some of its consequences.

Abstract: In this note I will describe a simple, but non-trivial, explicit example of a solution to the "coquecigrue" problem of Loday. More precisely, a Leibniz algebra structure will be defined on $\mathbb{R}^4$, and from this structure a digroup contained in this space, whose tangent space at the unit element inherits the original Leibniz algebra structure. This illustrates both, the properties that might be expected from the coquecigrues, and the difficulties still remaining in the full understanding of the problem.

Abstract: It is well known that a connected Kenmotsu manifold of dimension ≥ 5 cannot be conformally flat. In this paper, we study ϕ-conformally flat, ϕ-conharmonically flat and ϕ-projectively flat Kenmotsu manifolds such that the dimension of the manifold > 3.

Abstract: In this paper an attempt is made to understand various partial differential equations describing motion of objects like shallow waves (magnetic flows etc.) or in general flows in a medium as a geometric principle occurring in a Lie group. After analysing the motion of a rigid body about a point and the motion of an ideal incompressible flow the principle is formulated and the corresponding prototype of the equation is given. This equation was studied for several interesting examples from mathematical physics and physics. The needed differential-geometric tools were developed on the necessary Lie groups and their Lie algebras. Several interesting observations were inserted at several places. This paper gives a thorough, systematic and up to date understanding of certain special flows as geodesic flows on certain Lie groups with respect to a suitable invariant Riemannian metric.

Abstract: The two-phase Magnetohydrodynamic flow and heat transfer problem in a horizontal channel is considered in presence of a strong uniform inclined magnetic field. The induced field is produced in the flow direction. The fluids of different phases are assumed to be immiscible, incompressible, steady, one-dimensional and fully developed. The viscosities and thermal conductivities are considered to be different for different phases. The transport properties of the two fluids are taken to be constant and the bounding plates are maintained at constant and equal temperature. The upper phase is conducting whereas the lower phase is non-conducting.

The interest of investigation is focused on upper-phase. The analytical solutions of velocities, induced magnetic field and temperature distributions are obtained and are computed numerically for different heights and viscosity ratios for two fluids and for two different values of electric load parameters Re. The computed results for velocity, magnetic field and temperature distributions are plotted for distances from the fixed horizontal plates and for different angle of inclinations.

Abstract: Let G be an abelian group and R a commutative unital ring. We find a criterion only in terms of R and G when the group $V(RG)$ of all normalized units in the group algebra RG can be decomposed as $GV(RG_0)$ whenever G_0 is the torsion subgroup of G. This continues our recent investigations in (*An. Univ. Bucuresti - Math.*, 2005) and (*Bull. Allahabad Math. Soc.*, 2008) as well as it extends a result of Karpilovsky (*Expo. Math.*, 1990).

Abstract: In this survey article we examine the influence of several Banach space coefficients formulated during the last three decades to the existence of fixed points of non-expansive mappings.

Abstract: We prove some necessary and sufficient conditions for a non-decreasing sequence of non-negative integers to be a sequence of numbers, called scores, attached to the vertices of oriented graphs.

Abstract: The study of iterated contraction was initiated by Rheinboldt in 1969 [4]. The concept of iterated contraction proves to be very useful in the study of certain iterative process and has wide applicability. In this survey paper a brief introduction of iterated contraction maps is given and some fixed point results are proved.

Abstract: In this article, we establish inequalities between the Ricci curvature and squared mean curvature and also between k-Ricci curvature and the scalar curvature for a slant submanifold in a generalized Sasakian space form.

****