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CONTENTS WITH ABSTRACT

Abstract: We extend an example due to Cutler-Missel (Comm. Alg., 1984) of a separable efi $p^{\omega+2}$-projective abelian p-group which is not C-decomposable and thick by showing that there exists even an inseparable efi $p^{\omega+3}$-projective p-torsion Σ-group which is neither C-decomposable nor thick. This supplies two recent results of ours in (Comm. Alg., 2008).

Abstract: In this study, we consider generalized recurrent, generalized Ricci-recurrent and generalized concircular recurrent contact metric manifolds, ξ belonging to k-nullity distribution. We show that there exist no generalized recurrent and generalized Ricci-recurrent contact metric manifolds, ξ belonging to k-nullity distribution, unless $k\alpha + \beta$ is everywhere zero. Furthermore, we find the characterizations of scalar curvatures of generalized recurrent and concircular recurrent manifolds of such type.

Abstract: We investigate the GH_k integral for functions defined on (possibly) unbounded subintervals of the extended real line and with values in Riesz spaces. Some convergence theorems are proved, together with a version of the Fundamental Formula of Calculus.

Abstract: Most of the matter in the universe can, in some form or other, be treated as a fluid and in several phenomena such as supernova explosions, jets in extragalactic radio sources, accretions onto neutron stars and black holes, high-energy particle beams, high-energy nuclear collisions etc. undergoes the relativistic motion. In the general relativity the matter content of the spacetime is described by the energy-momentum tensor which is determined from physical considerations dealing with the distribution of the matter and energy. Since the matter content of the universe is assumed to behave like a perfect fluid in the standard cosmological model, the physical motivation for studying Lorentzian manifolds is the assumption that a gravitational field may be effectively modelled by some Lorentzian metric defined on a suitable four dimensional manifold which is called the general relativistic spacetime. The object of the present paper is to study a type of a general relativistic spacetime with vanishing and as well as the divergence free W_2-curvature tensor.

Abstract: The aim of this paper is to combine the method of reflective function and the perturbation method. The set of a linear differential systems, the reflecting matrix for which is represented by a product of three exponential matrixes is allocated. It has allowed to obtain the sufficient conditions of existence of a family of periodic solutions close to a given solution of multidimensional nonlinear differential systems. Obtained results are illustrated by examples.

Abstract: In this paper, we give some criteria for the nonlinear differential systems to be simple systems and find out their reflective functions. The results are applied to the discussion of the behavior of solutions of these nonlinear differential systems. In particular, we discuss the qualitative behavior of solutions of Riccati equation.

Abstract: Based on (A, η)-monotonicity, a new class of nonlinear variational inclusion problems is presented. Since (A, η)-monotonicity generalizes A-monotonicity and H-monotonicity and in turn, generalizes maximal monotonicity, results thus obtained are general in nature and encompass a broad range of previous results.

Abstract: We use a structure from set theory to define a locally convex topology on ℓ_∞ which is coarser than the usual norm topology and gives rise to a smaller dual space. The two topologies have the same boundedness, compactness and weak compactness characteristics; under the new topology ℓ_∞ is complete but lacks most weak barrelledness properties. We also identify our space as a space of continuous functions on a certain pseudocompact, locally compact space and show that its topology is a Mackey topology.

Abstract: In the present paper, K denotes a complete, non-trivially valued, non-archimedean field. Entries of sequences, series and infinite matrices are in K. The purpose of the present paper is to extend Theorem 1 of [2] for double series, introduce the concept of convolution for double infinite matrices and to prove some basic results related to that concept in non-archimedean fields.

Abstract: In this paper, we study the classification of Stein manifolds equipped with codimension one (holomorphic) actions of $\mathbb{C}^n$. We regard the case of algebraic foliations on $\mathbb{C}^{n+1}$ and prove a linearization result. The other main result of this paper

states that a Stein manifold M of dimension $n+1$ and equipped with a holomorphic action of the complex additive group $\mathbb{C}^n$ such that the corresponding foliation has a suitable dicritical singularity is biholomorphic to $\mathbb{C}^{n+1}$. Indeed, there is a partial linearization for the action on M.

Abstract: The concept of fuzzy contra strongly precontinuous mapping are introduced and studied. Properties and relationship of fuzzy contra strongly precontinuous mapping are established. Also, some applications to fuzzy compact spaces are given.

Abstract: The qualitative theory of ordinary differential equations and numerical simulation methods are employed to investigate the solitary waves of a nonlinear four-ordered equation. Under the condition $r > 0$, the wave equation can be changed to a planar system, the properties of the singular points are studied, and the bifurcation phase portraits are drew. The parameter conditions that the existence of solitary waves to be found, and their solutions are obtained. The planar graphs of the travelling wave equation are simulated using the mathematical software *Maple*. The numerical simulation and qualitative results are identical.

Abstract: Let $g : B \to \mathbb{C}^1$ be a holomorphic map on the unit ball B. This note studies the boundedness and compactness of the

Riemann-Stieltjes type integral operators

$$T_g f(z) = \int_0^1 f(tz)\Re g(tz)\frac{dt}{t} \quad \text{and} \quad L_g f(z) = \int_0^1 \Re f(tz)g(tz)\frac{dt}{t},$$

$z \in B$, between different mixed norm spaces of holomorphic functions $H_{p_1,q_1,\gamma_1}(B)$ and $H_{p_2,q_2,\gamma_2}(B)$.

Motohico Mulase and Brad Safnuk

MIRZAKHANI'S RECURSION RELATIONS, VIRASORO CONSTRAINTS AND THE KDV HIERARCHY 189-218

Abstract: We present in this paper a differential version of Mirzakhani's recursion relation for the Weil-Petersson volumes of the moduli spaces of bordered Riemann surfaces. We discover that the differential relation, which is equivalent to the original integral formula of Mirzakhani, is a Virasoro constraint condition on a generating function for these volumes. We also show that the generating function for ψ and κ_1 intersections on $\overline{M}_{g,n}$ is a 1-parameter solution to the KdV hierarchy. It recovers the Witten-Kontsevich generating function when the parameter is set to be 0.

Ishak Altun and Duran Turkoglu

A FIXED POINT THEOREM ON GENERAL TOPOLOGICAL SPACES WITH A τ-DISTANCE 219-228

Abstract: In this paper, we prove some fixed point theorem for mappings satisfying contractive condition of integral type on general topological spaces using a τ-distance which is given by Aamri and El Moutawakil in [1]. Our results extend and generalize the results of Aamri and El Moutawakil [1], Branciari [4] and some others.

S. L. Singh and Rajendra Pant

Abstract: The main purpose of this paper is to obtain coincidence and common fixed point theorems for non-continuous maps using (IT)-commutativity. Some recent results are improved considerably.