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CONTENTS

Abstract: In a complete seperated and locally multiplicatively convex commutative algebra, we discuss the stability of the solution of the following integral equation

$$a(t)\varphi(t) + \frac{1}{\pi i}\int_L \frac{k(t,\tau)}{\tau - t}\varphi(\tau)d\tau = f(t).$$

as t on L, where L is a path in a complex plane.

Abstract: One-sided Tauberian results are considered for weighted means and a result of Vijayraghavan is extended.

Abstract: Boundedness and convergence of the extended Lagrange interpolating operator are investigated in the space $L^p_{u,t}$ of Sobolev type.

Abstract: For Ω an open subset of $R^n, n \geq 1$, we define composition operators on the space $W^{1,p}(\Omega)$ and discuss a sufficient condition under which the weighted composition operator uC_ϕ becomes a compact operator in $W^{1,p}(\Omega)$.

Abstract: The asymptotic and oscillatory behaviour of solutions of second order nonlinear delay difference equation of the form

$$\Delta(p_n h(y_n)\Delta y_n) + q_n f(y_{\sigma(n+1)}) = 0, \quad n = 0, 1, 2, \ldots$$

is studied. Examples are inserted to illustrate the results.

Ruggero Maria Santilli

Abstract: In a preceding article we have introduced the isotopies of the of the differential calculus and of Newton's equations of motion. In this second paper we use these results to construct the isotopies of classical and quantum mechanics. We show that the isotopies of Hamiltonian mechanics, called *isohamiltonian mechanics*, permit the derivation of the most general possible isotopic Newton's equations from a variational principle which is of first-order in isospace over an isofield, but of arbitrary order when projected in conventional spaces over conventional fields. As a consequence, the isohamiltonian mechanics permits a representation of the extended and deformable shape of the body considered as well as of nonlocal-integral and variationally non-self adjoint forces directly in the frame of the experimenter. We also show that the construction of isoanalytic representations from the given nonlinear, nonlocal and nonhamiltonian equations of motion (here called *inverse isotopic Newtonian problem*) is considerably easier than that of the conventional inverse Newtonian problem. The *conditions of variational isoself-adjointness, the calculus of isovariations, the iso-optimization theory* and related topics are briefly are indicated. We then identify the isotopies of conventional quantization and show that they lead to unique and unambiguous isotopies of quantum mechanics capable of preserving all the essential characteristics of the original isotopic Newton's equations, thus permitting the representation in the fixed inertial frame of the experimenter of nonlinear, nonlocal and nonhamiltonian systems, with considerable broadening of the arena of applicapability of conventional formulations.

R. K. Singh, Bhopinder Singh and Kamaljeet Kour

Abstract: Let $CL_h(E)$ be a locally convex spaces of all continuous endomorphisms on a locally convex space E, which is endowed with the topology of uniform convergence on bounded subsets of E. In this paper, we characterize idempotent as well as invertible composition and multiplication operators on $CL_h(E)$.

B. Choudhary and S. K. Mishra

Abstract: In [4] Schmidt gives a fixed point theorem for discontinuous quasimonotone maps in $\mathcal{R}^n$, C_0 and $Q_p(1 \leq p < \infty)$. In this note we extend the result to any BK-space with AK-property.

P. N. Natarajan

Abstract: In the present paper, sequences and infinite martices have entries in a complete, non-trivially valued, non-archimedean field K. A sufficient condition for the space $l_\alpha, \alpha > 0$, to be closed under a generalized product introduced earlier is obtained.

Hari Kishan and P. N. Mishra

Abstract: In the present model, an inventory system has been considered in which demand varies exponentially as time t with backlogging option and a constant fraction θ of on hand stock also deteriorates with time.

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