CONTENTS

   Abstract: Deleanu, Frei and Hilton have developed the notion
of generalized Adams completion in a categorical context. The
construction of a complete metric space from an incomplete met-
ric space is a well known result in general topology. In this paper,
it is shown that this completion of a metric space is, in fact, the
Adams completion of the metric space with respect to a suitable
set of morphisms in a category.

   Abstract: Deleanu, Frei and Hilton have developed the notion
of generalized Adams completion in a categorical context; they
have also suggested the dual notion, namely, the Adams cocom-
pletion of an object in a category. In this paper we obtain the
different stages of an abelian group as the cocompletions of the
group via homology theory of groups.

> **Abstract:** In this paper we obtain a class of modular equations
> in Ramanujan's alternative theory of elliptic functions of signa-
> ture 4 and employ them to obtain a new class of P-Q eta-function
> identities with four moduli akin to Ramanujan's.

> **Abstract:** In this paper a theorem on summability $\mid \alpha, \beta \mid$,
> $\alpha = 1, \beta > 1$, of the Fourier series has been proved. The theorem
> includes the well known result on the local property of $\mid C, 1 + b \mid$
> $(b > 0)$ due to Bosanquet.

> **Abstract:** In this short note we investigate when the density
> topology on a topological group is pseudo-complete.

Raju K. George and Rajesh C. Shah

SOLVABILITY AND CONTROLLABILITY OF CONTROLLED
LIENARD SYSTEM   59-69

Abstract: In this paper we investigate the solvability and controllability of the Lienard equation. For solvability analysis we use a more general Lienard system which was recently studied by Huang [**2**] for boundedness of solution. We give sufficient conditions on the nonlinear function in the Lienard system which will ensure the solvability and controllability of the system. In our analysis, we make use of the Banach contraction principle and theory of Lipschitz continuous operators. We also obtain algorithm for the computations of the steering control.

Liu Lanzhe

WEIGHTED WEAK TYPE (H^1, L^1) ESTIMATES FOR COMMUTATORS
OF LITTLEWOOD-PALEY OPERATORS   71-78

Abstract: We show the weighted weak type (H^1, L^1) estimates for the commutator of Littlewood-Paley operators.

P. N. Natarajan

ON THE ALGEBRA (c_0, c_0) OF INFINITE MATRICES IN NON-
ARCHIMEDEAN FIELDS   79-87

Abstract: In the paper K denotes a complete, non-trivially valued non-archimedean field. Infinite matrices and sequences have entries in K. A few results in the context of the algebra (c_0, c_0) of infinite matrices under a convolution product are studied.

Abstract: Carathéodory's approach is adapted towards generating a measure on a countable complete bounded lattice of functions from X to the closed unit interval I via an outer measure on I^X. The conditions satisfied by the generated measure lead to an axiomatic definition of an F^*-probability measure space of which the classical probability measure space is an example.

Abstract: In this note we prove two generalizations of the following result:

Suppose that (a_n) and (b_n) are two sequences of nonnegative numbers such that $a_{n+1} \leq a_n + b_n$ for all $n \geq 1$. If $\sum_{n=1}^{\infty} b_n < \infty$, then the sequence (a_n) converges.

These two results consider sequences of real numbers which satisfy a difference inequality of order equal to $k \in N$. Also we generalize this result for a system of difference inequalities.

Abstract: The determination of the upper and lower bounds (preferably sharp bounds) $f(G) + f(G^c)$ and $f(G)f(G^c)$ where G is a graph of order p is called the Nordhaus-Gaddum problem for a given graph theoretic parameter f and a positive integer p. In this paper we study the sums and products of values of the vertex

partition number over the factors of a decomposition.

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