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CONTENTS

Abstract: Let $f : [a, b] \longrightarrow \mathbb{R}$ be a continuous function such that the n-th order symmetric Laplace derivative $SLD^n f$ exists in (a, b). It is proved that if $SLD^n f$, $SLD^{n-2} f$, $SLD^{n-4} f, \ldots$ are Darboux and Baire*1 in (a, b) and if the upper symmetric Laplace derivative $\overline{SLD}^{n+2} f$ is non-negative in (a, b), then the ordinary n-th order derivative $f^{(n)}$ exists and is convex in (a, b).

Abstract: The translational hull of a semigroup has been much considered in the literature on semigroup theory (cf. [2, 4, 5]). The idea has been generalized in several directions (cf. [6]). We provide a generalization of translational hulls to a pair of automata specialising to automata of left and right translations of a semigroup.

Abstract: In this paper, we deal with a uniqueness question of difference operators of two entire functions sharing a entire small function. The results in this paper extend the corresponding results given by Qi and Liu [3] and by Chen, Chen and Li [4].

Abstract: In this short paper, entries of infinite matrices and sequences are real or complex numbers. We prove two product theorems involving the (N, p_n) and (M, λ_n) methods of summability.

Abstract: We formulate the conditions under which the new frame generated by a single added element to a given frame possessing a given property also holds that property. The properties discussed in this paper include compactness, regularity, complete regularity and normality.

Kailash Lachhwani

Abstract: In this paper, we present an alternate procedure based on fuzzy goal programming (FGP) approach to solve multiobjective linear-plus-linear fractional programming (MOL+LFP) problem in which each objective function is in the form of $f(X) + \frac{g(X)}{h(X)}$ i.e. sum of linear function and ratio of two linear functions of non negative variables subject to linear constraints under the assumption that the denominator part of each objective function is non zero on the constraint set. In the FGP model formulation, firstly the objectives are transformed into fuzzy goals (membership function) by means of assigning an aspiration level to each of them. Then achievement of the highest membership value of each of fuzzy goals is formulated by minimizing the sum of negative deviational variables. The aim of this paper is to present simple technique to obtain compromise optimal solution of MOL+LFP problem. A comparative analysis with proposed FGP models based on numerical examples is also carried out to show efficiency of proposed methodology over traditional fuzzy programming approach.

R. Anantharaman

Abstract: In this paper we consider some connections between Banach spaces and classical Harmonic Analysis. We let $T = R/2\pi Z$:

(i) Majority of elements (in sense of Baire's category) in the Banach Space c_0 (or l^∞) cannot be (sequence of) Fourier coefficients of any function in $L^1(T)$ or measure (respectively in $rea(T)$, the Banach space of regular real valued measures on Borel sets of T.

Further a majority of functions (or measures) in both spaces have the property that the sequence of their Fourier coefficients do not belong to l^p for any $p \geq 1$.

(ii) In connection with the Hausdorff-Young theorem, a similar statement holds for the spaces l^q and the space L^p for $1 < p < 2 < q$, where p and q are conjugates.

(iii) Lacunary series in $C(T)$.

(iv) A theorem that a certain (closed) subspace C_Λ of $C(T)$ has Cotype 2 iff $\bigwedge$ is a Sidon set.

(v) We mention the intriguing classical fact related to a result of Marcel Riesz, i.e. for $1 < p < \infty$ the trigonometric system is a Schauder basis in L^p. (It is an unconditional one only if $p = 2$).

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