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CONTENTS

Abstract: In this paper, by using transformation formula of basic hypergeometric functions and other results, the authors obtain some new Rogers-Ramanujan type identities.

Abstract: Let G be a compact abelian group and H a Hilbert space. Let $L^2(G,H)$ denote H-valued square integrable functions. We prove an analouge of Plancherel theorem for $L^2(G,H)$. Using this result, we give a characterization of translation invariant operators on $L^2(G,H)$.

Abstract: In this paper we consider a particular case of Binomial sums of the form $S_f(n,k) = \sum_{i=0}^{n} f(i,k)\binom{n}{i}$. We obtain the generating function for $S_f(n,k)$ and for a specific $f(n,k)$ establish a relationship between $S_f(n,k)$ and $A_k(j) = \sum_{d=k}^{j}(-1)^{j-d}\binom{j}{d}[\frac{d}{k}]$.

The motivation for studying such sums comes from the many identities that arise for particular cases of the function $f(n,k)$, refer to Gould [1] and Menon [4].

Abstract: The purpose of this paper is to prove some common fixed point theorems for weakly compatible, not necessarily continuous maps which generalize several known corresponding results in uniform spaces.

Abstract: The steady state response of a micropolar viscoelastic solid with an overlaying infinite non-viscous fluid subjected at the plane interface to a moving point load has been studied. The eigen value approach using Fourier transforms has been employed and the transform has been inverted by using a numerical technique. The displacement, microrotation and stress components are obtained in the transformed domain. The results for micropolar viscoelastic solid and micropolar elastic solid are compared. Variations of moving load velocity on normal displacement, force stress and couple stress and couple stress have been shown numerically for a particular model.

Abstract: In this paper, we have extended the study of Siquing Xie's [8](0,1,3)*- interpolation by taking a set of nodes obtained by projecting the zeros of $(1-x^2)P_n^{(\lambda)}(x)$, where $P_n^{(\lambda)}(x)$ is the n^{th} ultraspherical polynomial with $-\frac{1}{2} < \lambda \leq \frac{1}{2}$, on the unit circle.

Abstract: A brief analysis of the problem of two dimensional free convective flow of a viscous incompressible fluid through a porous medium bounded by a uniformly moving long vertical wavy wall and a parallel flat wall under the influence of magnetic field is presented. The solution consists of two parts: a mean part and a perturbed part. To solve the perturbed part, long wave a approximation has been applied. To obtain the solution of the mean part, the well known approximation used by Ostrach [3] has been utilised.

The velocity profiles, temperature profile and the skin friction, heat transfer at the walls are demonstrated graphically for different values of the parameters involved. All numerical calculations are done with respect to air ($P = 0.71$).

Abstract: In this paper we introduce the concept of semi-g* -closed sets and analyse some of its properties in a space considered by Alexandroff [1] where arbitrary union of open sets not be open. We also introduce in the spaces a new separation axiom with the help of these sets which we name as semi- T_W axiom.

Abstract: In this paper we discuss about the origin of " Fractional Calculus" and its historical development contributed by different mathematicians from mid-nineteenth century to last decades of nineteenth century. Although fractional calculus is a generalization of calculus and its mathematical history is equally long. In this paper a long standing controversy is also discussed with modern definition of fractional calculus in twentieth century. We are trying to concentrate to over that definition of fractional calculus, which was proposed by great mathematician Katsuyuki Nishimoto during twentieth century. This paper is survey of fractional calculus, which is a part of mathematics, dealing with generalization of derivatives to derivatives of arbitrary order not necessarily an integer. It concerns with study of differentiation and integration to non integer (fractional) order. With the aid of theory of fractional calculus we can introduce an operator D^v, where v could be rational or irrational, positive or negative, real or complex.

Abstract: We introduce the concept of $g\alpha^\sharp$ -closed sets in topological spaces and study its characterization. Moreover we investigate $g\alpha^\sharp c$ -homomorphism and their group structure. We also introduce and study a new class of functions called strongly $g\alpha^\sharp$ -irresolute functions.

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