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**P. N. Natarajan**

ON TRANSLATIVITY OF WEIGHTED MEANS IN NON-ARCHIMEDEAN  
FIELDS 123-130

**Abstract:** In this paper,  $K$  denotes a complete, non-trivially valued, non-archimedean field. Sequences and infinite matrices have entries in  $K$ . The main purpose of this paper is to prove a few theorems on the translativity of the weighted means or  $(\tilde{N}, p_n)$  methods in  $K$ .

**Erdal Ekici**

ON  $\gamma$ -US SPACES 131-138

**Abstract:** In this paper, we introduce and study  $\gamma$ -US topological spaces. Also,  $\gamma$ -convergency, sequentially  $\gamma$ -compact sets, sequentially  $\gamma$ -continuous functions, sequentially nearly  $\gamma$ -continuous functions, sequentially  $\gamma$ -compact preserving functions and sequentially sub- $\gamma$ -continuous functions have been introduced.

**I. Franjić, J. Pečarić and A. Vukelić**

GENERAL EULER-SIMPSON FORMULAE 139-157

**Abstract:** We consider general Simpson formulae, using some Euler-type identities. A number of inequalities, for functions whose

derivatives are either functions of bounded variation or Lipschitzian functions or  $R$ -integrable functions, are proved.

**A. Frazer Jarvis, Peter J. Larcombe and David R. French**

ON SMALL PRIME DIVISIBILITY OF THE CATALAN-LARCOMBE-FRENCH SEQUENCE 159-181

**Abstract:** We present some divisibility properties of the general term of the Catalan-Larcombe-French sequence by small primes, recovering its known 2-adic valuation. New explicit results for divisibility by 3, 5, 7 and 11 are also developed, and the work generalised. Numerical computations lead to some other divisibility criteria and a number theoretic link with the Franel numbers.

**H. W. Gould**

CLASSES OF ITERATED BINOMIAL TRANSFORMS 183-203

**Abstract:** We define and explore several classes of binomial transforms and their iterations. Standard binomial transform:

$$F(n) = \sum_{k=0}^n \binom{n}{k} f(k), \quad n \geq 0. \quad (1)$$

The  $r$ -th iteration of this is given by

$$F^{(r)}(n) = \sum_{k=0}^n \binom{n}{k} r^{n-k} f(k). \quad (2)$$

Dual binomial transform:

$$G(n) = \sum_{k=n}^{\infty} \binom{k}{n} f(k), \quad n \geq 0. \quad (3)$$

Even index binomial transform:

$$H(n) = \sum_{k=0}^n \binom{2n}{2k} f(k), \quad n \geq 0. \quad (4)$$

General iteration of (4):

$$H^{(r)}(n) = f(n) + \sum_{k=0}^{n-1} \binom{2n}{2k} f(k) \frac{1}{2^{r-1}} \sum_{j=0}^{\lfloor \frac{r-1}{2} \rfloor} \binom{r}{j} (r-2j)^{2n-2k}, \quad (5)$$

Modulo  $s$  binomial transform:

$$H(n, s) = \sum_{k=0}^n \binom{sn}{sk} f(k), \quad (6)$$

First iteration of  $H(n, s)$ :

$$H^{(2)}(n, s) = \sum_{k=0}^n \binom{sn}{sk} f(n-k) \frac{1}{s} \sum_{j=1}^s (1 + \omega_s^j)^n. \quad (7)$$

where  $\omega_s$  are the  $s$ -th roots of unity.

**R. K. Deka, M. K. Mazumdar and V. M. Soundalgekar**

EFFECT OF FREQUENCY ON THE TRANSIENT FOR STOKES'S  
OSCILLATING PLATE-AN EXACT SOLUTION IN KNOWN  
FUNCTIONS

205-216

**Abstract:** An exact solution to the transient for Stokes's oscillating plate is derived in terms of time  $t$  and the frequency  $\omega$ , when the plate oscillating as  $\sin(\omega t)$  or  $\{-\cos(\omega t)\}$ . It is observed that the maximum of the transient solution shifts towards the oscillating plate as  $\omega$  increases and this is more in the case of  $\{-\cos(\omega t)\}$  as compared to the case of  $\sin(\omega t)$ . However, the transient solution which is the difference between the steady-state and starting profile decreases as  $\omega$  increases showing the existence of steady-state solution. In general, in the presence of frequency the oscillation

does not require longer time for transition to decay.

**M. L. Mittal, Uday Singh, Vishnu N. Mishra, Shalini Priti  
and Saurabh Shyam Mittal**

APPROXIMATION OF FUNCTIONS (SIGNALS) BELONGING TO  $LIP(\xi(t), p)$ -  
CLASS BY MEANS OF CONJUGATE FOURIER SERIES USING  
LINEAR OPERATORS 217-229

**Abstract:** Mittal and Rhoades ([6]-[9]) have initiated the studies of error estimates  $E_n(f)$  through Trigonometric Fourier Approximations (t.f.a.) for the situations in which the summability matrix  $T$  does not have monotone rows. In this note, we determine the degree of approximation of function  $\tilde{f}$ , conjugate of a periodic function  $f$ , belonging to  $Lip(\xi(t), p)$ -class by matrix (without monotone rows) operators on a conjugate series of Fourier series associated with  $f$ . Our theorem generalizes the results of Lal and Nigam [4] and Qureshi [12, 13].

**Sanjib Kumar Datta**

ON THE GROWTH OF COMPOSITION OF ENTIRE AND  
MEROMORPHIC FUNCTIONS 231-248

**Abstract:** In the paper above we study the growth properties of composite entire and meromorphic functions improving earlier results.

**B. K. Lahiri and Kalishankar Tiwari**

PERIODIC POINTS OF A SET-VALUED MAPPING

249-257

**Abstract:** We prove two periodic (possibly fixed) point theorems for set-valued mappings in a metric space using the Hausdorff metric.

**Baljeet Singh, Jagdish Singh and Ajay Kumar**

PROPAGATION OF THERMOELASTIC WAVES AT A SOLID-SOLID  
INTERFACE IN PRESENCE OF CRACKS

259-278

**Abstract:** The reflection and refraction of plane thermal wave at an interface between a generalized thermoelastic solid half-space and a generalized thermoelastic solid half-space in presence of saturated cracks is studied. The boundary conditions at the interface are solved to obtain six nonhomogeneous equations involving reflection and refraction coefficients. These six equations are solved numerically for a particular model. The reflection and refraction coefficients are plotted against angle of incidence of obliquely incident thermal wave. Various reflected and refracted waves are found affected by the presence of saturated cracks.

**Hemant Kumar Nashine**

EXISTENCE OF BEST APPROXIMANT FOR GENERALIZED  
 $I$ -NONEXPANSIVE MAPS IN NON-CONVEX SET

279-288

**Abstract:** Some results on existence of best approximant in terms of a common fixed point for generalized  $I$ -nonexpansive mappings without using the starshapedness condition of domain and affineness condition of mappings in Banach space are established. The present work generalizes the recent result of Shahzad

[14] and the result of Mukherjee and Som [7]. A property known as Property ( $\Gamma$ ) is defined to restore the affineness nature of mappings.

**S. Bhargava, Chandrashekar Adiga and N. Anitha**

ON A CLASS OF  $N$ -PARITY PARTITIONS

289-293

**Abstract:** In this paper, we introduce the notion of  $N$ -parity partitions and obtain the generating function for a certain class of such partitions. We will thus be able to relate such partitions to certain compositions.

**U. C. De, Y. H. Kim and Absos Ali Shaikh**

CONTACT METRIC MANIFOLDS WITH  $\xi$  BELONGING TO  
THE  $(k, \mu)$ -NULLITY DISTRIBUTION

295-304

**Abstract:** This paper presents a study of contact metric manifolds with characteristic vector field  $\xi$  belonging to the  $(k, \mu)$ -nullity satisfying  $R(X, \xi) \cdot C = 0$ , where  $R(X, Y)$  is considered as a derivation of the tensor algebra at each point of the manifold for tangent vectors  $X, Y$  and  $C$  is the Weyl conformal curvature tensor of type  $(1, 3)$ .

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