M. A. K. Baig and Rayees Ahmad Dar

Upper and lower bounds for Csiszar $f$-divergence in terms of symmetric $J$-divergence and applications

Abstract: In this paper, we point out an upper and lower bound for the Csiszar $f$-divergence of two discrete random variables in terms of the symmetric $J$-divergence measure. Some particular cases for chi-square distance, Hellinger discrimination, triangular discrimination, Renyi’s $\alpha$-entropy, Bhattacharya distance and harmonic distance are considered.

Joydip Dhar and Anuj Kumar

The stability analysis of phytoplankton and zooplankton in spatially heterogeneous domain

Abstract: A mathematical model of interacting phytoplankton and zooplankton is population proposed, incorporating the spatial movement of plankton population. We also assume that the release of the toxic substance by the phytoplankton species. Since the plankton populations are not static and uniformly distributed over a region. Therefore, the study of existence, coexistence and stability analysis makes sense in spatio-temporal domain. In this paper we have studied the existence of linear and nonlinear stability conditions for the uniform as well as non-uniform steady state.
system. It is observed that the diffusion process enhances the stability of the plankton system.

P. Chandrakala and S. Antony Raj

Radiative heat and mass transfer effects on moving isothermal vertical plate in the presence of magnetic field

Abstract: Thermal radiation effects on flow past an impulsively started infinite vertical isothermal plate with variable mass diffusion in the presence of magnetic field is studied. The fluid considered here is a gray, absorbing-emitting radiation but a non-scattering medium. The plate temperature is raised to $T_w$ and the concentration level near the plate is also raised linearly with time. The dimensionless governing equations are solved using the Laplace-transform technique. The velocity, temperature and skin-friction are studied for different parameters like magnetic field parameter, radiation parameter, thermal Grashof number, mass Grashof number and time. It is observed that the velocity increases with decreasing values of the radiation parameter and decreases in the presence of magnetic field.

W. T. Sulaiman

On inclusion relations for absolute summability

Abstract: We obtain necessary and sufficient conditions for a series $\sum a_n$ summable $|R,p_n|k$, $1 < k \leq s < \infty$, to imply that the series $\sum a_n\lambda_n$ is summable $|T|s$ where $(R,p_n)$ is a weighted mean matrix and $T$ is a lower triangular matrix. Some other results are also deduced.

S. A. Wahid
**On matching polynomial of square corridor**

**Abstract:** A recurrence relation is derived for the matching polynomial of the square corridor type graph. Explicit formulae are then given for the first seven and final three coefficients.

Baljeet Singh, Jagdish Singh and Ajay Kumar

**Reflection of thermal wave from a cracked generalized thermoelastic solid half-space**

**Abstract:** A reflection-refraction study of plane thermal waves at an interface between a thermally conducting liquid half-space and a cracked generalized thermoelastic solid half-space is considered. The boundary conditions at liquid-solid interface are satisfied to obtain the five relations in amplitude ratios of various reflected and refracted waves. A particular model of the interface is considered for numerical computations. The amplitude ratios are plotted against the angle of incidence of thermal wave for the saturated cracks. Effects of saturated cracks are observed on reflected and refracted waves.

Shavetambry Tejpal and T. D. Narang

**On closest and minimal points**

**Abstract:** In this paper we discuss closest points, minimal points and center of a set in metric spaces and show that minimal and closest points are the same in strictly convex metric spaces. It is also shown that a set $C$ in a metric space is optimal i.e. $C = \text{min}(C)$ if and only if $C$ is the fixed point set of a quasi non-expansive mapping.

Rajneesh Kumar, Ranjit Singh and T. K. Chadha
Abstract: The eigenvalue approach is employed for the two-dimensional axisymmetric problem in a micropolar thermoelastic medium without energy dissipation after applying integral transforms. An example of an infinite space subjected to a concentrated force is studied. The integral transforms have been inverted using a numerical technique to obtain displacement, stress, couple stress and temperature distribution which are also shown graphically.

I. H. Elmabruk

The effect of delay on local asymptotic stability of a positive equilibrium

Abstract: A comparative discussion of the stabilizing or destabilizing effect of the incorporation of delay into a two-predators, one-prey system on a positive equilibrium of the system has been done.