



# UNIVERSITY OF CALCUTTA

## NATIONAL PROGRAMME ON DIFFERENTIAL EQUATIONS : THEORY, COMPUTATION & APPLICATIONS (NPDE-TCA 2013)

(Sponsored by DST)



### ADVANCED LEVEL WORKSHOP ON “NONLINEAR DIFFERENTIAL EQUATIONS: DYNAMICS OF COMPLEX SYSTEMS” (NDEDCS-2013)

#### Venue

DEPARTMENT OF APPLIED MATHEMATICS, UNIVERSITY OF CALCUTTA

September 23<sup>rd</sup> -28<sup>th</sup>, 2013

University of Calcutta will be hosting an advanced level workshop on “Nonlinear Differential Equations: Dynamics of Complex Systems” (NDEDCS-2013) during September 23<sup>rd</sup> -28<sup>th</sup>, 2013 under National Program on Differential Equations : Theory, Computation & Applications (npde-tca) and DST-PURSE Programme of Calcutta University.

The study of complex systems constitutes an interdisciplinary field involving a range of disciplines like mathematics, physics, chemistry, biology, economics and the social sciences. Two major techniques employed in the studies of complex systems are: dynamical systems theory based on the differential rate equation approach and stochastic theories based on the master equation, Langevin and Fokker-Planck formalisms.

#### OBJECTIVES :

The main objective of the proposed workshop is to bring together experts working in the field of complex systems and put in focus the essential role of differential equations in determining the collective behavior of the complex systems and acquiring an understanding thereof.

#### MAIN TOPICS :

Stability and bifurcation in nonlinear systems, spatially extended systems, coupled nonlinear dynamical systems with dissipation / forcing, time delay and their networks, solution of PDE with wavelet and related methods, stochastic processes and its applications.

#### TARGET AUDIENCE :

Young researchers, college and university teachers as well as Ph.d students working in related areas.

#### ADVISORY COMMITTEE :

Indrani Bose (Bose Institute, Kolkata), Debshankar Roy ( IACS, Kolkata), B.N. Mandal (ISI, Kolkata), Partha Guha (SNBCBS, Kolkata), Prasanta Panigrahi (IISER, Kolkata), K.P. Das, C. G. Chakrabarti, Uma Basu, Bijan Bagchi (Dept. of Applied Maths, CU), Susmita Sarkar (Head, Dept. of Applied Maths, CU).

#### ORGANIZING COMMITTEE:

P.K. Chaudhuri, Sanjay Sen, Tripti Chakrabarti, Krishna Kundu, Tanuka Chattopadhyay, Debasis Sarkar, Suma Debsarma, Mridula Kanoria, Samiran Ghosh, Swarup Poria, Soumen De, Indrani Chattopadhyay, Ishita Mukherjee, Subenoy Dasgupta, Debnarayan Jana, Parongama Sen, Pinaki Chaudhuri.

#### RESOURCE PERSONS:

Jayanta Kumar Bhattacharjee (Director, HRI), V. Balakrishnan (IIT, Chennai), M.Lakshmanan (Bharatidasan University, Tiruchirapally), Govindan Rangarajan (IISc, Bangalore), Deepak Dhar (TIFR, Mumbai), Pranay Goel (IISER, Pune), Sitabhra Sinha (IIMSc, Chennai), Soumitro Banerjee (IISER, Kolkata), B. S. Dandapat (SMIT, Sikkim), K. P. Das (Calcutta University), Anandamohan Ghosh (IISER, Kolkata), M. M. Panja (Viswabharati).

**CO-ORDINATOR :** **Susmita Sarkar**, Head , Deptt. of Applied Mathematics, University of Calcutta.

#### PARTICIPATION :

To participate in the workshop, fill in the required form which can be downloaded from the website: <http://www.math.iitb.ac.in/~npde-tca/> and email to: [npde.2012@gmail.com](mailto:npde.2012@gmail.com) or by post to the following contact address before last date.

#### CONTACT :

Convener, NPDE-TCA, Advanced Workshop (NDEDCS-2013), Department of Mathematics, Indian Institute of Technology, IIT Bombay, Powai, Mumbai - 400076, Email : [npde.2012@gmail.com](mailto:npde.2012@gmail.com), Phone : 022-25764765.

**Last date of receipt of application: 15<sup>th</sup> July, 2013 till 5.00 p.m.**

**Selection of participants will be based on their academic records and recommendation letter.**

**List of selected participants will be put on the web page by 18<sup>th</sup> July, 2013.**