UNIVERSITY OF KASHMIR

ADVANCED LEVEL WORKSHOP ON " NONLINEAR FUNCTIONAL ANALYSIS & ITS APPLICATIONS " (NFAA-2013)

(Sponsored by DST)

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF KASHMIR, SRINAGAR

October 21 -29, 2013

The Department of Mathematics, University of Kashmir in collaboration with National Program on Differential Equations: Theory, Computation and Applications (NPDE-TCA) in IIT Bombay will be hosting an advanced level workshop on "Nonlinear Functional Analysis & Its Applications " (NFAA-2013) during October 21st -29th, 2013.

Preamble

Nonlinearity is eminently visible in problems of practical importance in many inter-disciplinary areas of science and engineering. The investigations of these problems require exposition on development of a common theory of nonlinear analysis, which has already acquired enormous proportion. The decade of sixties and seventies saw the emergence of the theory of monotone operators and voluminous expansion of various formulations of fixed point theorems resulting in to a systematic study of operator equations involving nonlinear operators.
The subsequent decades saw applicability of prime results in this study for the solvability analysis of nonlinear ordinary and partial differential equations as well as integral and integro-differential equations. These equations model real life problems in many fields like space science, financial engineering, control engineering, structural dynamics and information technology. The task of analyzing these models is simplified if readily available technology of nonlinear functional analysis is properly understood.
The workshop aims to spread the working knowledge of this technology by bringing together an expert group of nonlinear analysts to expand on various aspects of its salient features, covering the following topics.

Topics

Review of linear analysis, Calculus on normed spaces, Theory of monotone operators and fixed Point theorems, Solvability analysis of ordinary differential and integral equations; Mathematical theory of finite dimensional controls-controllability, observability and optimal control of linear & nonlinear systems; Elements of Sobolev spaces, Approximation theorems, Imbedding and compactness theorems; Linear eigenvalue problem-Krein-Rutman type problem, Mountain pass theorem with applications to nonlinear partial differential equations.

Target Audience

Ph. D scholars, young researchers in universities and R & D organizations and advanced level M.Sc. and B.Tech students with sufficient analysis background.

Organizing Committe

N. A. Rather, M. A. Sofi, M. H. Gulzar, S. Pirzada, B. A. Zargar, Qazi M. Dawood, M. A. Khanday, M. Abdullah Mir (University of Kashmir); Mohan C. Joshi (IIT Gandhinagar); Amiya K Pani (IIT Bombay).

Resource Persons

Mohan C Joshi, D V Pai (IIT, Gandhinagar); Amiya K Pani (IIT Bombay); P N Srikanth (TIFR, Bangalore); Raju K George (IIST, Thiruvananthpuram); S Kesavan (IMS, Chennai); Amin Sofi (Kashmir University); N Sukavanam (IIT Roorkee).

Coordinator/Co- Coordinator

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Contact

Convener, NPDE-TCA, Advanced Workshop (NFAA-2013), Department of Mathematics, Indian Institute of Technology, IIT Bombay, Powai, Mumbai - 400076, Email : npde.2012@gmail.com, Phone : 022-25764765.
To participate in the workshop, fill in the required form available in the site http://www.math.iitb.ac.in/~npde-tca/ and email it by August 26, 2013.

List of selected participants will be put on the web page by ***28th August, 2013***