

Introduction

This theme meeting on FUZZY AND INTERVAL BASED UNCERTAINTY MODELING will be jointly organized by Department of Mathematics, NIT Rourkela and Board of Research in Nuclear Sciences, Department of Atomic Energy, Government of India during 18-20 July, 2013. The topics of the meeting are designed to cater the needs of teachers, scientists from R&D labs, practicing engineers and research scholars. The meeting aims to bring-out the importance of uncertainty modeling using interval and fuzzy based approach. It provides a forum for presentations and discussions by eminent speakers and delegates in this area combining inter-disciplinary subjects.

Scope

In real life problems, how to deal with variables and parameters of uncertain value is an important issue. Generally, the parameters are taken as crisp for simplifying the problem. However, there is incomplete information about the variables being a result of errors in measurement, observations, experiment or the application of different operating conditions or a maintenance induced error etc. Rather than the particular value, only the vague, imprecise and incomplete information about the parameter is present, which is called the uncertain information. Basically these uncertainties can be modeled through probabilistic approach, interval analysis and fuzzy theory.



Unfortunately, probabilistic methods are not able to deliver reliable results at the required precision without sufficient experimental data. It may be due to the probability density functions involved in it. As such in the recent decades, interval analysis and fuzzy theory are becoming powerful tools for many real life applications. In these approaches, the uncertain variables and parameters are represented by interval and fuzzy numbers, vectors or matrices. Rather than the particular value of the properties or parameters, we may have only the imprecise bounds of the values. The corresponding problem will then become uncertain and the analysis and solution would require then careful application of the methods. Recently, the machine intelligence and other methods have come as a relief from such problems. In order to have an idea of how to handle the uncertainty in physical problems, this event may give a new vista to take on the challenge.

Tentative Topics to be covered

- Interval and fuzzy based approach for uncertain structural problems;
- Interval and fuzzy based approach for uncertain fluid dynamics problems;
- Uncertain heat conduction problems using interval and fuzzy computation;
- Uncertain neutron diffusion problems using interval and fuzzy computation;
- Uncertainty modeling in robotics, nuclear structures and environment;
- Uncertain ordinary, partial and arbitrary order differential equations;
- Artificial neural network, rough sets and granular computing based solution of uncertain engineering problems;

- Fuzzy stochastic, fuzzy time series and fuzzy optimization uncertainty modeling and other related topics.

Note : Participants may submit research papers related to the above for presentation. The length of the paper should not exceed six pages. The paper may be published as a proceedings.

Speakers

In the meeting experts from NITs, IITs, ISI, BARC, BRNS, TIFR-CAM Bangalore, IMSc Chennai and also from international institutes may deliver the lectures.

Registration Fee

Research Scholars	Rs.1000/-
Academic/Scientists	Rs.2000/-
Industry	Rs.5000/-
Foreign Delegates	US\$200/-

Only 50 candidates will be accommodated in first come first serve basis. The candidates have to pay a nominal registration fee as above to ensure a seat. The draft must be made in favour of '**FIUM, NIT Rourkela**' payable at **SBI, NIT Rourkela branch only** and to be sent to the address of correspondence.

Accommodation

Outstation participants will be provided accommodation in institute Guest House / Hostels / Hotels (**on payment basis**). The institute is situated at only 15 minutes driving distance from Rourkela railway station. For institute accommodation please contact the convener well in advance at the e-mail.

NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA

Theme Meeting on
FUZZY AND INTERVAL BASED
UNCERTAINTY MODELING

18–20 JULY, 2013

[Registration form should contain the following information;
it should be printed (not hand-written) on A4 size paper]

1. Name:
2. Position:
3. Department:
4. Institution/Organization:
5. Address:
6. E-mail Address:
Mobile No.:
Telephone No.:
Fax No.:
7. No. of research publications (if any):
8. Area of research interests:
9. Accommodation wanted : Yes/No

Signature HOD recommendation⁺

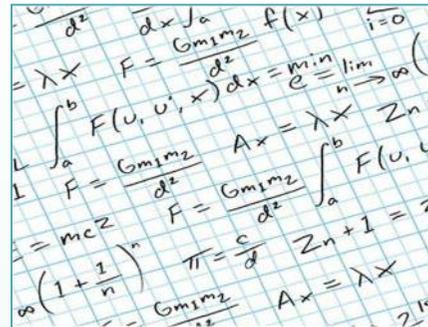
⁺ Correspondence will be done by e-mail, but
hardcopy with all signatures is needed.

Department of Mathematics

The department imparts teaching of Mathematics in undergraduate engineering and post graduate courses (2 years and 5 years integrated) in Mathematics. In M.Sc. (Mathematics) various applied and pure courses viz. Differential Equation, Algebra, Numerical Analysis, Operations Research, Topology, Functional Analysis, Statistics, Fuzzy Set Theory, Fluid Dynamics etc. are taught as core/special papers. The department is also engaged in research on various inter disciplinary subjects.

Important Dates

Receipt of applications and Abstract : May 05, 2013;
Selected candidate list : May 06, 2013;
Receipt of the draft & full length paper : May 21, 2013;
Course duration : July 18-20, 2013.



Address for Correspondence

Prof. S. Chakraverty

Department of Mathematics, NIT Rourkela
Odisha - 769008, India
Phone: 0661- 2462713(O)
E-mail: tmfium2013@gmail.com

Theme Meeting on **FUZZY**
AND INTERVAL BASED
UNCERTAINTY MODELING
(FIUM-2013)

18 –20 July, 2013

Prof. S.CHAKRAVERTY (NITR)
&
Prof. D. ROY (BRNS & HBNI-DAE)
(Conveners)

Organized Jointly by



DEPARTMENT OF MATHEMATICS
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA (NITR), ODISHA - 769008, INDIA



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