



# INDIAN STATISTICAL INSTITUTE

## SYSTEMS SCIENCE & INFORMATICS UNIT

COMPUTER AND COMMUNICATION SCIENCES DIVISION  
8<sup>TH</sup> Mile, Mysore Road, R.V. College Post, Bangalore, India  
<http://www.isibang.ac.in/~sstdpa/>

*FIVE-DAY COURSE ON*

# Spatial Statistical Tools in Data Processing and Analysis

**26 – 30 November 2012**

**Technical Sponsorship by**



**Institute of Electrical and  
Electronic Engineers**

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Geographical  
Society**  
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# INTRODUCTION

A five-day Course on "Spatial Statistical Tools in Data Processing and Analysis" is being organised during 26 - 30 November, 2012 at Systems Science and Informatics Unit, Indian Statistical Institute - Bangalore Centre.

Enormous amount of spatial data—for various natural, anthropogenic, and socio-economic phenomena from a wide range of sources, available in continuous and discrete forms in spatial and/or temporal scales—invites a host of novel techniques to unravel meaningful spatial information. Such spatial information is useful to develop cogent spatiotemporal models. Spatial statistics offers numerous methodologies essentially drawn from the fields of mathematical morphology, geostatistics, neural networks, fuzzy set theory, rough set theory, fractal geometry and digital image processing. Of late, these spatial statistical methods received wide attention from researchers of various scientific and engineering disciplines. This course will provide the targeted audience the experience of the potential applications of spatial statistical tools in various fields with special emphasis on spatial data processing and analysis. Join us in this course as several speakers deliver lectures on methods, techniques and applications with hands-on practical sessions related to spatial data processing and analysis.

# LIST OF SPEAKERS

- ❖ John H. (Jack) Schuenemeyer (Statistical Consulting Corporation, COLARADO, USA)
- ❖ Monika Ray (University of California-Davis, USA)
- ❖ Wolfgang Martin-Boerner (University of Illinois -Chicago, USA)
- ❖ Bhanu Prasad Pinnamaneni (Matrix Vision, GERMANY)
- ❖ N. Radhakrishnan (TIFAC CORE, Rajalakshmi Engineering College, Chennai, INDIA)
- ❖ C. Babu Rao (Indira Gandhi Centre for Atomic Research, Kalpakkam,INDIA)
- ❖ N. Rama Rao (Indian Institute of Space Science and Technology, Trivendrum, INDIA)
- ❖ Sumitra (Indian Institute of Space Science and Technology, Trivendrum, INDIA)
- ❖ Pabitra Pal Choudhury (Indian Statistical Institute, Kolkata, INDIA)
- ❖ Saroj Kumar Meher (Indian Statistical Institute, Bangalore, INDIA)
- ❖ B.S. Daya Sagar (Indian Statistical Institute, Bangalore, INDIA)

# LECTURES

- Analogs, expert judgment, dependency, and aggregation
- Modeling gas hydrate resources - a statistician's perspective
- Introduction to mathematical morphology
- Binary and grayscale granulometries
- Morphological interpolations and extrapolations
- Mathematical morphology in quantitative spatial reasoning
- Introduction to machine learning algorithms
- Hyperspectral image classification by multiple classifier system
- Granular soft computing with application to pattern recognition and mining
- Aspects of mathematical morphology and stereology in the talk
- The industrial applications; Smart cameras, Parking management (More related spatial analysis) and Traffic analysis
- Implementation of FULL-POL-SAR in Agriculture, forestry and aquaculture as well as for the detection of natural hazards and natural disaster assessment from air and space for South, East and Pacific Asia – with emphasis on multi-band FULL-POL-SAR image fusion
- A Quantitative Model for Human Olfactory Receptors - Part – 1 & 2
- Practical Quantitative Microscopy - Part – 1 & 2