



Advanced Training in Mathematics Schools

Supported by *National Board for Higher Mathematics*

Workshop on Representation theory of finite groups of Lie-type: Deligne-Lusztig theory

Venue: **School of Mathematics, Tata Institute of Fundamental Research (TIFR), Mumbai**

5 - 17 December 2011

Conveners: *Dipendra Prasad (TIFR) & K. N. Raghavan (IMSc)*

Brief Description of ATM Schools

Advanced Training in Mathematics (ATM) Schools are a joint effort of a large number of mathematicians across the country with support from the National Board for Higher Mathematics. The programmes are conducted in reputed mathematics departments in Summer and Winter each year. In these Schools, the emphasis will be on problem solving and on highlighting inter-relations of basic subjects in mathematics. The schools are offered mainly for Ph.D. students and lecturers.

Workshop on Representation theory of finite group of Lie-type: Deligne-Lusztig theory

Representation theory of finite groups is arguably among the most beautiful chapters of Mathematics. Among the finite groups, after the symmetric groups, the finite groups of Lie type such as $GL(n; \mathbb{F}_q)$ are the most interesting groups.

The work of Deligne and Lusztig in the 70's in their monumental work published in *Annals of Maths*, vol. 103 (1976), 103-161, realizing the representations on the l -adic cohomology of what are now called Deligne-Lusztig varieties.

The reference will be the book due to F. Digne & J. Michel on *Representations of Finite Groups of Lie type* published by the London Math society, which we plan to do completely during this school. On the last 2 days, i.e. 16th and 17th, there will be a mini-conference.

Eligibility for Participation

Prerequisite for attending the program: Basic knowledge of representation theory of finite groups, in particular that of $GL(2, \mathbb{F}_q)$, where $\mathbb{F}_q$ is the finite field of q elements.

The workshop will admit 30 students in their second & third years of Ph.D. programme, postdoctoral fellows and some college/university teachers.

Resource persons

Shripad Garge	IITB, Mumbai
Maneesh Thakur	ISI, Delhi
C. S. Rajan	TIFR, Mumbai
K. N. Raghavan.	IMSc, Chennai
Amritanshu Prasad	IMSc, Chennai
Dipendra Prasad	TIFR, Mumbai

Guest Lectures

N. S. N. Sastry	ISI, Bangalore
B. Sury	ISI, Bangalore

Financial Support

Selected participants will be paid III-AC return train fare from their place of work/home town to the venue by shortest route and provided with accommodation and local hospitality.

How to Apply

The syllabus, application form and other information about the programme is available on the website:

<http://www.atmschools.org/2011>

Online application can be done from the website and the applicants will get a copy of the application. An attested hard copy is to be sent to the Convener.

Applications may also be made on plain paper, giving the following information:

Name, Date of Birth, Age, Gender, Institute / Department, Areas of interest, list of Ph.D. courses (including reading courses) completed, ATM Schools attended, any other workshop in mathematics attended, Address for correspondence, email address, Phone No., City, State, Pincode, Academic Record: B.Sc./M.Sc. with names of the Institutes, email addresses of 2 recommending teachers, any other information. These should be attested by Head/Principal of the institute. **Completed applications may be sent by mail or a scanned copy may be sent by email to**

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by **28th September, 2011**. List of selected candidates will be posted on the ATM School website on **3rd October 2011**.

National Committee for the ATM Programme

Prof. S. A. Katre	Pune U., Pune
Prof. S. Kesavan	IMSc, Chennai
Prof. Shobha Madan	IIT Kanpur
Prof. N. Nitsure	TIFR, Mumbai
Prof. J. K. Verma (Convener)	IIT Bombay