



Advanced Training in Mathematics Schools

Supported by National Board for Higher Mathematics

Advanced Instructional School in Representation Theory and its Applications

Venue: Bhaskaracharya Pratishthana, Pune & Dept. of Mathematics, University of Pune

2-28 July, 2007

Conveners: Dipendra Prasad and A. K. Bhandari, Local Coordinator: S. A. Katre

Brief Description of ATM Schools

Advanced Training in Mathematics (ATM) Schools are a joint effort of more than 50 active researchers 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 problems solving and on highlighting inter-relations of basic subjects in mathematics. The schools are offered mainly for Ph.D. students and lecturers. At the initial stage, ATM Schools consist of two Annual Foundation Schools (AFS I & II) in basic topics such as algebra, analysis, and topology. At a later stage, Advanced Instructional Schools in different topics in Mathematics are organised especially for students who wish to pursue research in related areas.

Advanced Instructional School in Representation Theory and its Applications

Representation theory of groups is one of the most beautiful subjects in mathematics which finds applications to many other subjects including Physics and Chemistry, besides being of fundamental importance to numerous areas of mathematics. The aim of this summer school will be to offer a first course in representation theory of finite as well as compact groups. After developing the general theory, the school will try to emphasize representation theory of specific groups such as $SU(2)$, $SL(2, F_q)$, and the symmetric groups, which forms building blocks for representation theory of more complicated groups. There will be some lectures on applications of representation theory to Number theory, as well as combinatorics, and perhaps an example from the work of the Fields medalist Okounkov's work. There will be some lectures too to bring out the historical perspective of the subject.

We expect that there will be some follow-up workshops to this material in the next two years.

A special feature of this AIS programme is the inclusion of "Unity of Mathematics" Lectures on "Historical Overview of Representation Theory" and "Meromorphicity of Artin L functions".

Resource persons

Ashwani Bhandari	S. V. Kanetkar	R. S. Kulkarni
M. K. Srinivasan	Maneesh Thakur	Amritanshu Prasad

Unity of Mathematics Lectures

I.B.S. Passi and R. Sridharan

Eligibility for Participation

The school will admit 40 students in their first and second years of Ph.D. programme, and a few young university lecturers and college teachers. Students who have attended AFS-I/II before will be given preference to attend this school.

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, applications form and other information about the programme is available on the websites:

<http://www.math.iitb.ac.in/atm> or www.bprim.org

Applications may also be made on plain paper, giving the following information: Name, Date of Birth, Age, Gender, Institute/Department, Areas of interest, Address for correspondence, email address, City, State, Pincode, Academic Record: B.Sc./M.Sc./ with names of the Institutes. These should be attested by Head/Principal of the institute.

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Completed application forms should reach by Thursday, 5th April, 2007. List of selected candidates will be posted on the website of ATM Schools on **Sunday, 15th April, 2007.**

National Coordinating Committee

Director	R. S. Kulkarni	IIT Bombay
Secretary	J. K. Verma	IIT Bombay
Members	S. D. Adhikari	HRI, Allahabad
	S. Deo	HRI, Allahabad
	S. A. Katre	Pune U., Pune
	S. Madan	IIT Kanpur
	I. B. S. Passi	Panjab U., Chandigarh
	R. A. Rao	TIFR, Mumbai