Advanced School
in
Basic Algebraic Geometry

7 – 18 July 2003
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing an **Advanced School in Basic Algebraic Geometry** from 7 to 18 July 2003. It will be directed by L. Göttsche (ICTP), C.S. Seshadri (Chennai Mathematical Institute, India) and A. Vistoli (Università di Bologna, Italy).

Algebraic Geometry is one of the central topics of Mathematics with many connections to other fields like Differential Geometry, Algebra, Number Theory and Theoretical Physics. In the 50's and 60's it was revolutionized by the use of the modern language of schemes and by new techniques and constructions, many of which were introduced by Grothendieck. These techniques and constructions are very important for many questions in algebraic geometry, for instance in the study of moduli problems. The modern language and approach are now indispensable for anyone wanting to work seriously in the field.

On the other hand, it is well known that these modern techniques are difficult to learn and to master. The aim of this School is to give an introduction to some of the fundamental techniques and results. The School mostly concentrates on the content of the famous Bourbaki Lectures, "Fondements de Géométrie Algébrique" (FGA) of Grothendieck, in which some of the most fundamental constructions of modern Algebraic Geometry are made. The aim of the School will be not only to present the main results, but also to teach the relevant techniques and constructions, to enable graduate students and young researchers to apply them in their own work. The lecturers will try to give the connection to recent developments.

The School will be organized into lecture courses of about 5 - 10 hours each on the following topics.

- **Descent** - A. Vistoli *(Università di Bologna, Italy)*
- **Grothendieck topologies** - A. Vistoli *(Università di Bologna, Italy)*
- **Hilbert and Quot schemes** - N. Nitsure *(T.I.F.R., Mumbai, India)* and L. Göttsche *(ICTP)*
- **Formal existence theorem for modules** - L. Illusie *(Université Paris-Sud, Orsay, France)*
- **Picard schemes** - S. Kleiman *(Massachusetts Institute of Technology, USA)*

Part of the afternoons will be used for exercise and example sessions, where the participants can practice and deepen their understanding of the results and methods.

The School is intended for advanced undergraduate students, graduate students and young researchers. Participants should be familiar with the language of schemes.

Mathematicians from all countries that are members of the United Nations, UNESCO or IAEA may attend the activity. As it will be conducted in English, participants must have a good working knowledge of that language. Although the main purpose of the ICTP is to help researchers from developing nations through a programme of training activities within a framework of international cooperation, students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants from and working in a developing country, and who are not more than 45 years old. There is no registration fee.

The **Application Form** is obtainable from the ICTP WWW server: **http://agenda.ictp.trieste.it/smr.php?1487** (which will be constantly updated) or from the activity Secretariat. It should be completed and returned before <u>28 February 2003</u> to:

Advanced School in Basic Algebraic Geometry
(c/o Ms. A. Bergamo, smr1487)
The Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11, 34014 Trieste, Italy
or
smr1487@ictp.trieste.it *(please save and send file attachments in RTF format)*

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28 February 2003