

Summer School on Resolution of Singularities

12 - 30 June 2006

ICTP, Miramare - Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing a Summer School on Resolution of Singularities in algebraic geometry from 12 to 30 June 2006. It will be directed by S.D. Cutkosky (University of Missouri, Columbia, U.S.A.), J. Kollár (Princeton University, U.S.A.) and B. Teissier (Institut de Mathématiques de Jussieu, Paris, France).

The resolution of singularities is an important tool in algebraic geometry which has a lot of applications in other areas of Mathematics. The purpose of this event is to give the state of art in the resolution of singularities, specially over fields of positive characteristic.

The school will cover most of recent progress on the resolution of singularities.

The themes will be commutative algebra related to the resolution of singularities, resolution of curves and surfaces, minimal models, valuation theory, effective algorithm of resolution of singularities, toroidalization, resolution in positive characteristics

Different courses will be organized during the two-first weeks on the following topics :

Commutative algebra with a view towards resolution and singularities of minimal models

Resolution of curves and surfaces in characteristic zero and p

Rational and canonical singularities

Minimal models and classification of surfaces

Valuation theory and local uniformization

Resolution of singularities in characteristic zero

Effective algorithms of resolution of singularities and computer implementation

Alterations and applications

Simplification of morphisms:

* **Factorization of birational maps**

* **Toroidalization**

Minimal models in dimension 3 and higher

A conference with renown experts will be held during the third week. Details of the event will be available at the end of April 2006.

The School is intended for advanced undergraduate students, graduate students, and young researchers. Participants should be familiar with basic methods of algebraic geometry and basic algebra. Besides the lectures, there will also be organized afternoon and evening exercise and example sessions.

Mathematicians from all countries that are members of the UN, UNESCO or IAEA can attend the activity. The main purpose of the Centre is to help researchers from developing countries within the framework of international cooperation. However, scientists from developed countries are most welcome to attend. As the activity will be conducted in English, participants must have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. However, limited funds are available for some applicants who are nationals of, and working in, developing countries, to be selected by the organizers. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. Such financial support is available only to those attending the entire activity. There is no registration fee.

The closing date for the receipt of requests for participation is 15 January 2006

Candidates should complete, sign and return the **Application Form** obtainable through the ICTP WWW Server from the activity's WEB Page, which will be constantly updated:

http://cdsagenda5.ictp.trieste.it/full_display.php?smr=0&ida=a05209

The Application form should be sent to:

**the Abdus Salam International Centre for Theoretical Physics
Summer School on Resolution of Singularities (smr1757)**

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ORGANIZERS

S.D. Cutkosky
Missouri, U.S.A.

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B. Teissier
Jussieu, France

Lecturers will include

M. Andreatta
Trento, Italy

A. Campillo
Valladolid, Spain

L. Ein
Chicago IL, U.S.A.

A. Frühbis-Krüger
Kaiserslautern, Germany

H. Hauser
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DEADLINE

for receipt of applications:

15 January 2006