Summer
School and Conference
on
Real Algebraic Geometry
and its Applications

4 – 22 August 2003
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing a **Summer School and Conference on Real Algebraic Geometry and its Applications** from 4 to 22 August 2003. It will be directed by F. Broglia (Università di Pisa, Italy), K. Kurdyka (Université de Savoie, France), M.F. Roy (Université de Rennes, France) and C. Traverso (Università di Pisa, Italy).

In the last decades Algebraic Geometry over the field of real numbers has made great advances. The new results obtained found applications in other fields of Science and Engineering.

The purpose of this activity is to train young scientists in the basics of *Real Algebraic Geometry* and show how it is applied in fields like *Control Theory, Dynamical Systems, Robotics, Computer Vision*.

The first week will be devoted to several basic courses on *Real Algebraic Geometry*: *Semi-algebraic Sets and o-Minimality, Topology of Real Algebraic Sets, Positive Polynomials, Polynomial Vector Fields*. During the second week various known applications of *Real Algebraic Geometry* will be explained: *Algorithm in Real Algebraic Geometry, Polynomial Systems and Robotics, Image Compression, Formal Calculus* and *CAO, Control Theory, Computer Vision*. The third week will be organized as a traditional advanced meeting where new results and recent trends will be shown: *Tropical Geometry, Motivic Invariants of Singular Sets, Real Singularities, Optimization and Sums of Squares, Quantitative and Algorithmic Aspects in Semi-Algebraic and Pfaffian Geometry, Control Theory and Applications to Robotics, Image Compression and Real Algebraic Geometry*.

During this activity, the first meeting of the African Net of Algebra and Geometry Applied to Development will be held.

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?1537

(which will be constantly updated) or from the activity Secretariat. It should be completed and returned before **15 March 2003** to:

**Summer School and Conference on Real Algebraic Geometry
and its Applications
(c/o Ms. A. Bergamo, smr1537)
The Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11, 34014 Trieste, Italy**

or

smr1537@ictp.trieste.it *(please save and send file attachments in RTF format)*

ORGANIZERS

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LECTURERS
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DEADLINE

15 March 2003