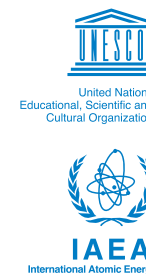




The Abdus Salam  
International Centre for Theoretical Physics



# ADVANCED SCHOOL AND CONFERENCE ON HOMOLOGICAL AND GEOMETRICAL METHODS IN REPRESENTATION THEORY

18 January - 5 February 2010

ICTP, Miramare – Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing an **Advanced School and Conference on Homological and Geometrical Methods in Representation Theory**, to be held from 18 January to 5 February 2010, in Trieste, Italy. It will be directed by José A. de la Peña (Mexico City, Mexico), Bernhard Keller (Paris, France), Helmut Lenzing (Paderborn, Germany) and Andrzej Skowronski (Torun, Poland).

The Representation Theory of Algebras has had an extraordinary development in recent years yielding an amazing number of connections with other fields of mathematics and physics.

The purpose of the proposed School is to give a panoramic view of the exciting results and methods of the field and introduce the participants to subjects of current research connecting representation theory of algebras to fundamental subjects as algebraic geometry, homological algebra and mathematical physics.

The following courses will be given during the two first weeks of the **School**, from 18 to 29 January 2010:

**Introduction to Auslander-Reiten theory (I. Reiten)**  
**Algebras of small homological dimension (A. Skowronski)**  
**Singularities in module varieties (G. Zwara)**  
**Rings of singularities (H. Lenzing)**  
**Degenerations of algebras (J. A. de la Peña)**  
**Koszul algebras and applications to algebraic geometry (D. Zacharia)**  
**Triangulated categories versus module categories (D. Happel)**  
**Stable categories of Cohen-Macaulay modules (O. Iyama)**  
**Cluster algebras and categories (B. Keller)**

The speakers for the third-week **Conference**, from 1 to 5 February 2010 are:

**C. Amiot** (Bonn), **L. Angeleri-Hügel** (Verona), **M. Barot** (Mexico City), **S. Bazzoni** (Padova), **P. Bergh** (Trondheim), **G. Bobinski** (Torun), **T. Brüstle** (Sherbrooke), **A. Buan** (Trondheim), **R.-O. Buchweitz** (Toronto), **I. Burban** (Bonn), **Xiao-Wu Chen** (Paderborn), **F.U. Colho** (Sao Paulo), **Y. Drozd** (Kiev), **K. Erdmann** (Oxford), **C. Geiss** (Mexico City), **L. Hille** (Münster), **D. Kussin** (Paderborn), **M. Reineke** (Wuppertal) (\*), **O. Kerner** (Düsseldorf), **H. Krause** (Paderborn), **S. Ladkani** (Bonn), **B. Leclerc** (Caen), **P. Malicki** (Torun), **H. Meltzer** (Szczecin), **S. Oppermann** (Trondheim), **M.J. Redondo** (Bahia Blanca), **C.M. Ringel** (Bielefeld), **M. Saorin** (Murcia), **J. Schröer** (Bonn), **O. Solberg** (Trondheim), **J. Xiao** (Beijing).  
(\* ) to be confirmed

## PARTICIPATION

Mathematicians from all countries that are members of the United Nations, UNESCO or IAEA may attend the School. As it will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help researchers from developing nations through a programme of training activities within the framework of international cooperation, students and 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 who are nationals of, and working in, a developing country, and who are not more than 45 years old. **Such support is available only for those who attend the entire activity. There is no registration fee.**

## HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website <http://agenda.ictp.it/smr.php?2129>. Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

**The closing date for receipt of requests for participation is 15 October 2009**

### **Secretariat:**

"Advanced School and Conference on Homological and Geometrical Methods in Representation Theory"

(smr 2129 c/o Ms. K. Mabilo)

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ICTP Home Page: <http://www.ictp.it>

Trieste, July 2009

## ORGANIZERS

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**D. Zacharia**

*Syracuse, USA*

**G. Zwara**

*Torun, Poland*

## DEADLINE

for receipt of applications

15 October 2009