



October 18, 2005

06pims009: Young Researcher Support for PASI 2006: Analysis and Probability in Quantum Physics

Organizers:

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Location:

San Joquin campus of the Pontificia Universidad Catolica de Chile, Santiago, Chile

PIMS Sites:

University of British Columbia

Objectives:

The Pan-American Advanced Studies Institute (PASI) is an intensive, two-week program for young researchers from the Americas. We also plan to have students from Europe funded through their research agencies. The goal of the program is to train the students in modern methods of mathematical quantum theory and to allow the students to interact with leading researchers in the field.

We anticipate at least 40 students from the Americas, with half coming from the US. We are requesting funds to help support students for the Institute from Canada. Students, consisting of advanced graduate students and post-docs, are expected to be in residence for the two week program. The first week 22 July until 28 July consists of six four-hour minicourses delivered by experts from the Americas on leading topics in mathematical quantum physics. The lecturers and courses are listed below. The second week 30 July until 4 August

consists of an international workshop with the participation of the students and leading researchers from around the world.

Comments:

This is the first PASI program on mathematical problems in quantum physics. There is an active and growing community of researchers in Canada, and, more generally, in the Americas, who will contribute to, and profit from, this program. The organizing committee of the PASI program is

1. Horacio Falomir, Universidad Nacional de La Plata, La Plata, Argentina
2. Claudio Fernandez, Pontificia Universidad Catolica de Chile, Santiago de Chile
3. P. D. Hislop, Chair, University of Kentucky, USA
4. Alejandro Ramirez, Pontificia Universidad Catolica de Chile, Santiago de Chile
5. Georgi Raikov, Universidad de Chile, Santiago de Chile
6. Ricardo Weder, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico

The PASI 2006 program webpage is www.uky.edu/pasi/.

Audience:

The PASI program is for students, consisting of advanced graduate students and post-docs, from the Americas. Students will be in residence for the two week program in Santiago. All of their expenses, including airfare, will be covered by the program.

Participants:

Week One of the PASI Institute consists of an intensive program designed to provide a common base in modern mathematical aspects of quantum physics for the students. The program consists of six, four-hour, minicourses delivered by international experts from the Americas, all of whom have confirmed their participation:

1. Laszlo Erdos, Georgia Institute of Technology and Universitat Munchen: Classical and Quantum Brownian Motion;
2. Ira W. Herbst, University of Virginia: The Spectral and Scattering Theory of Quantum Particles in External Fields;
3. Abel Klein, University of California, Irvine: Random Schrodinger Operators;

4. Jean Bellissard, Georgia Institute of Technology: Theory of Quantum Transport;
5. Richard Froese, University of British Columbia: Theory of Quantum Resonances;
6. Rafael Benguria, Pontificia Universidad Catolica de Chile: Stability of Matter and Quantum Field Theory.

Week Two of the PASI Institute is an international workshop with major researchers from around the world. The Institute students will have the opportunity to present their own work and to participate in discussions with these international experts. Among those invited, the following have confirmed their participation:

Gunther Uhlmann, University of Washington, USA; Plamen Stefanov, Purdue University, USA; Werner Kirsch, Ruhr Universitat Bochum, Germany; Mary Beth Ruskai, Tufts University, USA; Heinz Siedentop, Universitat Munchen, Germany; Carlos Villegas, UNAM, Cuernavaca, Mexico; Stanislov Molchanov, University of North Carolina, Charlotte, USA; Dimitri Yafaev, Universite de Renne, France; Eric Carlen, Georgia Institute of Technology, USA; Antonio Sa Barreto, Purdue University, USA; Leonid Korolov, Princeton University, USA; Francois Germinet, Universite Cergy-Pontoise, France; Frederic Klopp, Universite Paris-Nord, France; I. M. Sigal, University of Toronto, Canada; Yves Lejan, Universite Paris-Sud, France; Shu Nakamura, University of Tokyo, Japan; Vojkan Jaksic, McGill Univeristy, Canada.

Amount Requested:

7000.00

Expenditures:

The funds requested, \$7,000, will provide support for four post-docs and graduate students from Canada so that they may attend and participate in the PASI workshop in Santiago. Airfare: $4 \times \$1,250 = \$5,000$; Lodging for 14 nights: $4 \times \$350 = \$1,400$; Food for 14 days: $4 \times \$130 = \520 . These prices are based on lodging in a student hostel in Santiago, and on approximate costs for participants at recent conferences in Santiago.

Income:

The PASI 2006 Institute on Quantum Physics is

funded primarily through the US National Science Foundation and the Department of Energy. We have received a \$80,000 grant for this purpose. We have applied to the International Centre for Theoretical Physics in Trieste, Italy, for 5,000 Euros to support participants in the second week international workshop. We will also be applying to CONYCET in Chile and in UNAM in Mexico for additional participant support funds.

Selected Dates:

Sat, July 22, 2006

Fri, August 4, 2006