HGSFP Winter School 2007

When 16^{th}–21^{st} December 2007

Where Universitycenter Obergurgl, Austria (www.universitycenter-obergurgl.at)

Who Students from all branches of the HGSFP

Abstract

Within the framework of the student activities of the *Heidelberg Graduate School of Fundamental Physics* (HGSFP) we arrange a 5-days winter school at the Universitycenter Obergurgl, Austria. Lectures are planed for the three branches of the HGSFP both interdisciplinary, i.e., connecting several branches of the HGSFP, and specialized on the topics of each branch. Besides the guest program, the participating students should also prepare a short presentation of their Ph.D. project. Apart from the scientific training, a further concern of the winter school is to establish the graduate school as a platform to share both scientific knowledge and personal interests.

Registration

The registration is open for all students of the HGSFP. The number of participants is restricted to 10 students per branch following the first come - first served principle, but there will be a waitlist in case of cancellations. Furthermore, if there are less than 10 registration for a certain branch, the spots will be filled by students belonging the other branches. Each participant it is expected to give a brief presentation about his/her Ph.D. work. There will be no application fees, the following benefits are included:

- bus transfer Heidelberg ↔ Obergurgl
- accommodation in a 2- to 3-bed room including demipension

Program

There will be both separate and joint lectures for all three branches of the HGSFP. Each day, there will be a morning and afternoon session with an extended lunch break in between. The latter is at the students disposal, e.g., for further interdisciplinary discussions or to explore the mountains. We plan to invite a guest speaker for a joint lecture of general interest. The current list of speakers and topics is the following:

Quantum Dynamics and Complex Quantum Systems
Peter Krüger, University of Heidelberg
Cold Atoms as Strongly Correlated Quantum Many Body Systems: Introduction and Theoretical Description Experiments with Low Dimensional Quantum Gases Experiments with Strongly Interacting Fermionic Gases in the
Igor Lesanovsky, University of Innsbruck
Introduction to Floquet Theory Quantum Information with Ions
Sebastian Hofferberth, Harvard University
(Basic concepts of) Quantum Optics and Quantum Information

Astronomy and Cosmic Physics
Carola Tiede, Max Planck Institute for Astronomy Heidelberg
Advanced Data Analysis
N.N.
Galaxy Formation/Evolution

Because of none pre-registrations in the branch of high energy / particle physics, unfortunately there are no lectures planed in this field. However, any suggestions and registrations are warmly welcomed. There is of course the possibility for students of this branch to participate in the winter school and to attend lectures "belonging" to different branches. Besides the guest lecture program, at least one session is reserved for the presentation of the Ph.D. projects of the participating students. Another session is planed for non-scientific joint social activities.