IRTG PhD days 2011

Report of Contributions

https://indico.desy.de/e/phddays2011

Contribution ID: **0** Type: **Lecture**

Mysteries of modern physics - Part 1

Tuesday 4 October 2011 09:10 (1h 20m)

Lecture part 1

Presenter: Dr ELLIS, John

Track Classification: Lecture ”Mysteries of modern physics”

Contribution ID: **1** Type: **Lecture**

Mysteries of modern physics - Part 2

Tuesday 4 October 2011 11:00 (1h 30m)

Lecture part 2

Presenter: Dr ELLIS, John

Track Classification: Lecture ”Mysteries of modern physics”

Contribution ID: **2** Type: **not specified**

arxiv vs. snarxiv

Tuesday 4 October 2011 18:00 (1 hour)

Contribution ID: **3** Type: **Lecture**

Physics at the smallest scales - Part 1

Wednesday 5 October 2011 09:00 (1h 30m)

Lecture part 1

Presenter: Dr ROVELLI, Carlo

Track Classification: Lecture ”Physics at the smallest scales”

Contribution ID: **4** Type: **Lecture**

Physics at the smallest scales - Part 2

Wednesday 5 October 2011 11:00 (1h 30m)

Lecture part 2

Presenter: Dr ROVELLI, Carlo

Track Classification: Lecture ”Physics at the smallest scales”

Contribution ID: **5** Type: **not specified**

Evening program (optionally)

Contribution ID: **6** Type: **Talk**

Transition-Edge Sensor: A new detector for the ALPS experiment

Tuesday 4 October 2011 16:40 (20 minutes)

The ALPS (Any Light Particle Search) experiment, located at DESY, goes in its second phase. To increase the sensitivity the experiment will be bigger and fancier: more laser power, a regeneration cavity and longer cavities. Besides of that improvements the collaboration is also looking for a new, more sensitive detector.
Because of the intrinsic noise of the CCD – the present detector of ALPS – now studies have started to build up an cryogenic single infrared photon detector. For that we use a Transition-Edge Sensor (TES), which is working at a superconducting transition in a Milli Kelvin range.
In this talk the principle of such a detector is explained and the application to ALPS and an overview of the recent work is given.

Primary author: Mr DREYLING-ESCHWEILER, Jan (DESY)

Presenter: Mr DREYLING-ESCHWEILER, Jan (DESY)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **7** Type: **not specified**

Welcome

Tuesday 4 October 2011 09:00 (10 minutes)

Contribution ID: **8** Type: **Talk**

DoIT - The PhD Initiative at DESY

Tuesday 4 October 2011 15:30 (10 minutes)

DoIT is a representation run by PhD students. We are in close contact with the DESY Directorate and other (administrative) bodies at DESY. We can give advice on all things concerning PhD students.

Primary author: Mr WENSKAT, Marc (DESY)

Presenter: Mr WENSKAT, Marc (DESY)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **9** Type: **Talk**

Cosmic Rays in the Galactic Magnetic Field

Tuesday 4 October 2011 17:00 (20 minutes)

Cosmic rays with energies up to 10^20 eV have been seen by the Pierre Auger Collaboration and other experiments. There are still many unanswered question concerning cosmic rays in this ultra-high-energy regime. For instance the measured structure of the flux, the incoming direction and the composition of the cosmic rays still bare question-marks. A possible explanation for these three problems, involving the interaction of these cosmic rays with the galactic magnetic field, will be presented in this talk.

Primary author: Mr VAN VLIET, Arjen (DESY)

Presenter: Mr VAN VLIET, Arjen (DESY)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **12** Type: **Talk**

Long-Lived staus - a promising signature at colliders

Tuesday 4 October 2011 16:00 (20 minutes)

Abstract will be given later.

Primary author: Mr HEISIG, Jan (University of Hamburg)

Presenter: Mr HEISIG, Jan (University of Hamburg)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **13** Type: **Talk**

A sufficient condition for de Sitter vacua in type IIB string theory

Wednesday 5 October 2011 15:00 (20 minutes)

We derive a sufficient condition for realizing meta-stable de Sitter vacua with small positive cosmological constant within type IIB string theory flux compactifications with spontaneously broken supersymmetry. There are a number of lamp post' constructions of de Sitter vacua in type IIB string theory and supergravity. We show that one of them – the method ofK\"ahler uplifting' by F-terms from an interplay between non-perturbative effects and the leading α'-correction – allows for a more general parametric understanding of the existence of de Sitter vacua. The result is a condition on the values of the flux induced superpotential and the topological data of the Calabi-Yau compactification, which guarantees the existence of a meta-stable de Sitter vacuum if met. Our analysis explicitly includes the stabilization of all moduli, i.e. the K\"ahler, dilaton and complex structure moduli, by the interplay of the leading perturbative and non-perturbative effects at parametrically large volume.

Primary authors: Dr WESTPHAL, Alexander (DESY); Mr RUMMEL, Markus (University of Hamburg)

Presenter: Mr RUMMEL, Markus (University of Hamburg)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **14** Type: **Talk**

Beyond the speed of light - Propagation of of the scalar field on Finsler spacetime

Wednesday 5 October 2011 14:20 (20 minutes)

Finsler spacetime manifolds are generalizations of Lorentz spacetime manifolds due to the use of Finsler geometry instead of Lorentz geometry. In this talk I present results on the propagation of the free scalar field on Finsler spacetimes.
On a specific Finsler spacetime that is a small departure from Minkowski spacetime I present the dispersion relation of the particle modes of the free scalar field and study the resulting particle velocity.

Primary author: Mr PFEIFER, Christian (II Institute for Theoretical Physics, Uni Hamburg)

Presenter: Mr PFEIFER, Christian (II Institute for Theoretical Physics, Uni Hamburg)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **15** Type: **Talk**

Tunneling Solutions in Scalar Field Theory

Wednesday 5 October 2011 14:40 (20 minutes)

In this talk I will present new, exact tunneling solutions for different potentials. I will also comment on applications in cosmology.

Primary author: Ms HECTOR, Cecelie (DESY Theory)

Presenter: Ms HECTOR, Cecelie (DESY Theory)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **16** Type: **Talk**

Three Open Questions of Early Universe Cosmology – One Common Answer

Tuesday 4 October 2011 14:20 (1h 10m)

Presenter: Mr SCHMITZ, Kai (DESY Hamburg)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **17** Type: **Talk**

IRTG student council

Tuesday 4 October 2011 14:10 (10 minutes)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **18** Type: **Talk**

Cosmology meets neutrino physics

Tuesday 4 October 2011 16:20 (20 minutes)

Presenter: Ms DOMCKE, Valerie (DESY)

Session Classification: Student session

Track Classification: Student session

Contribution ID: **19** Type: **Talk**

Quasi-stable neutralinos @ LHC

Wednesday 5 October 2011 14:00 (20 minutes)

Presenter: Mr HAJER, Jan (DESY)

Session Classification: Student session

Track Classification: Student session