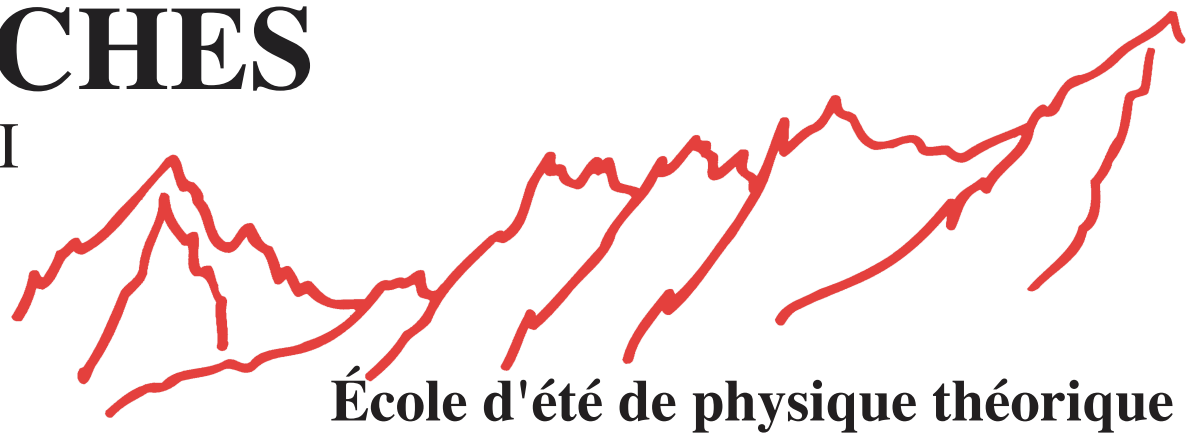


LES HOUCHES

SESSION LXXXVII



École d'été de physique théorique

String Theory and the Real World

From particle physics to astrophysics

ESF School of Theoretical Physics

2 – 27 July, 2007

Scientific Direction

Laurent Baulieu, Université Pierre et Marie Curie, Paris
Michael Douglas, Rutgers University and IHES, Bures
Eliezer Rabinovici, Racah Institute of Physics, Jerusalem

Scientific Committee

Costas Bachas, École Normale Supérieure, Paris
Elias Kiritsis, École Polytechnique, Palaiseau
Pierre Vanhove, CEA, Saclay
Paul Windey, Université Pierre et Marie Curie, Paris

General Theoretical Framework

N. Arkani-Hamed (Harvard)	Particle Physics, Cosmology and the Landscape
T. Damour (IHES)	String Theory, Gravity and Experiment
F. Denef (KLU)	Landscape Analysis
G.-F. Giudice (CERN)	Supersymmetry and the Real World
K. Intriligator (UCSD)	Supersymmetry Breaking
I. Klebanov (Princeton)	Gauge/String Dualities and their Applications
J. Maldacena (IAS)	Cosmology and Fundamental Theory
S. Shenker (Stanford)	Quantum Gravity and Cosmology
A. Uranga (CERN)	The Standard Model from D-branes

LHC with Strings Attached

I. Antoniadis, J. Ellis, F. Gianotti, N. Glover & U. Wiedemann (CERN & IPPP Durham)
Extra Dimensions, String Phenomenology, Physics beyond the Standard Model,
Accelerator and Experiments, QCD Calculations, Quark-Gluon Plasma

In addition to the main lectures, there will be daily seminars and shorter lectures on selected topics.

Scientific Programme

String theory has given us new insights into quantum gravity, and has provided non-perturbative techniques for analysing dynamical questions and computing observable predictions. It has suggested a variety of candidate solutions for all of the generally recognized problems of fundamental physics: the hierarchy problem, the cosmological constant problem, the nature of dark matter, and the origin of the fundamental constants. But does string theory describe our Universe? In this school, we will discuss the near term prospects for getting evidence for or against this claim, from experiments in particle and gravitational physics, and from astronomical and cosmological observations. Topics will include the origin of the standard model, supersymmetry and its breaking, and the physics of strongly coupled gauge theories, inflation, gravity waves, cosmic strings, and extra dimensions. A special lecture series will provide an introduction for theorists to LHC physics, surveying the accelerator and detectors, data analysis and modelling techniques, and anticipated signatures of new physics.

Registration

All candidates should apply, **before 2 March 2007**, at <http://www.lpthe.jussieu.fr/houches07/>. Late applications will not be considered. The full cost per participant, including housing, meals and the lectures book, is 1500 euros. Thanks to the financial support from various funding agencies, a contribution of only 900 euros is requested. A few additional grants will be available. Additional information on the Les Houches Institution can be found at the site: <http://w3houches.ujf-grenoble.fr/>.

Les Houches is a resort village in the Chamonix valley in the French Alps. Established in 1951, the Physics School is located in a group of chalets surrounded by meadows and woods, at an altitude of 1150 m facing the Mont-Blanc range — a very favourable environment for intellectual activity in ideal surroundings for hiking, mountaineering and sight-seeing.

The Physics School is affiliated to the Université Joseph Fourier and the Institut national polytechnique de Grenoble, and is supported by the ministère de la Jeunesse, de l'Éducation nationale et de la Recherche, the Centre national de la recherche scientifique (CNRS) and the Direction des sciences de la matière du Commissariat à l'énergie atomique (CEA/DSM).