



Lecture Course in the Integrated Research Training Group (IRTG)
of the SFB 676 "Particles, Strings and the Early Universe"

Winter Term 13/14

Introduction to Supersymmetry and Supergravity

J. Louis

Course Description:

Supersymmetry is a symmetry between bosonic and fermionic degrees of freedom which today is one of the central topics in High Energy Physics. It also has growing applications in Mathematics and other branches of Physics.

The lecture course offers an introduction to supersymmetry and supergravity and some of its applications. Specifically the following topics are covered:

- the supersymmetry algebra and its representation theory,
- supersymmetric Yang-Mills theories,
- the supersymmetric Standard Model,
- supersymmetric Grand Unification,
- extended supersymmetry and Seiberg-Witten theory,
- supergravity and its coupling to matter,
- extended supergravities and their geometrical properties.

Prerequisites:

Basic knowledge in General Relativity and Quantum Field Theory

Date and Place:	Wed, 11:00 – 12:30, SR 2/2a, DESY Fri, 11:00 – 11:45, SR 2/2a, DESY
Problem Classes:	Fri, 11:45 – 12:30, SR 2/2a, DESY
Starting on:	16 Oct 2012