

Advanced Theoretical Particle Physics - physics636

Degree - M.Sc. in Physics (PO von 2014)

<i>Module</i>	Specialization: Advanced Theoretical Physics
<i>Module No.</i>	physics62c

<i>Course</i>	Advanced Theoretical Particle Physics
<i>Course No.</i>	physics636

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	ST

Requirements for Participation:

Preparation: Theoretical Particle Physics (physics615)

Form of Testing and Examination: Requirements for the examination (written): successful work with the

Length of Course: 1 semester

Aims of the Course: Survey of methods of theoretical high energy physics beyond the standard model, in particular supersymmetry and extra dimensions in regard to current research

Contents of the Course:

Introduction to supersymmetry and supergravity,

Supersymmetric extension of the electroweak standard model,

Supersymmetric grand unification,

Theories of higher dimensional space-time,

Unification in extra dimensions

Recommended Literature:

J. Wess; J. Bagger; Supersymmetry and supergravity (Princeton University Press 1992)

H. P. Nilles, Supersymmetry, Supergravity and Particle Physics, Physics Reports 110 C (1984) 1

D. Bailin; A. Love; Supersymmetric Gauge Field Theory and String Theory (IOP Publishing Ltd. 1994)

M. F. Sohnius; Introducing supersymmetry, (Phys.Res. 128 C (1985) 39)

P. Freund; Introduction to Supersymmetry (Cambridge University Press 1995)