

# Masterseminar: Supersymmetry SoSe22

Organization: Joerg Jaeckel (jjaeckel@thphys.uni-heidelberg.de)

**1 Location: Philosophenweg 19, SR**

**2 Time: 11:15-13:00**

**3 Topics and Dates**

Date	Speaker	Topic
22.4.		organization, distribution of talks
29.4.	Heinrich Campe	Fermions and Bosons, equations of motion and all that
6.5.	Miao Hu	What is supersymmetry? Extension of the Poincare algebra.
13.5.	Manuel Salewski (SR Phil 12 3.OG)	Building a SUSY model I: The Wess Zumino model
20.5.	Felix Medwed (SR Phil 12 3.OG)	Introduction to Superfields
27.5.	Matteo Zortea	Building a SUSY model II: Using superfields
3.6.	Cedric Quint (SR Phil 12 3.OG)	Conditions for broken supersymmetry: F- and D-term breaking
10.6.	Youssef Aly	SUSY breaking with O’Raifeartaigh models
17.6.	Samuel DeCoste	Why we need a hidden sector: sum rules for SUSY breaking
24.6.	Jannis Gebhard	R-symmetry and the Nelson-Seiberg theorem
1.7.	Alessandro Rizzi	Hidden sector SUSY breaking I: Gauge mediation
8.7.	Davide Mapelli	Hidden sector SUSY breaking II: Gravity mediation
15.7.	Abdülmalik Kara	The MSSM
22.7.	Rafet Kavak	SUSY at the LHC

**4 Literature**

- S. P. Martin, “A Supersymmetry primer,” In \*Kane, G.L. (ed.): Perspectives on supersymmetry II\* 1-153 [hep-ph/9709356].
- A. Signer, “ABC of SUSY,” J. Phys. G **36** (2009) 073002 [arXiv:0905.4630 [hep-ph]].
- J. Wess and J. Bagger, “Supersymmetry and Supergravity”, Princeton University Press, 1992.
- M. E. Peskin, “Supersymmetry in Elementary Particle Physics,” arXiv:0801.1928 [hep-ph].
- H. P. Nilles, “Supersymmetry, Supergravity and Particle Physics,” Phys. Rept. **110** (1984) 1.
- J. D. Lykken, “Introduction to supersymmetry,” hep-th/9612114.

- K. A. Intriligator, N. Seiberg and , “Lectures on Supersymmetry Breaking,” *Class. Quant. Grav.* **24** (2007) S741 [hep-ph/0702069].
- A. E. Nelson, N. Seiberg and , “R symmetry breaking versus supersymmetry breaking,” *Nucl. Phys. B* **416** (1994) 46 [hep-ph/9309299].
- G. F. Giudice, R. Rattazzi and , “Theories with gauge mediated supersymmetry breaking,” *Phys. Rept.* **322** (1999) 419 [hep-ph/9801271].