

1. Record Nr.	UNINA9910254609603321
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Titolo	Constraining Supersymmetric Models : Using Higgs Physics, Precision Observables and Direct Searches // by Lisa Zeune
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-22228-7
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (216 p.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	539.725
Soggetti	Elementary particles (Physics) Quantum field theory String theory Elementary Particles, Quantum Field Theory Quantum Field Theories, String Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- The Standard Model and supersymmetric extensions of it -- Perturbative calculations -- Experimental status -- The W boson mass in the SM, the MSSM and the NMSSM -- The diphoton decay channel in the MSSM and the NMSSM -- Fitting the MSSM to the observed Higgs signal -- Constraining SUSY scenarios using simplified models -- Conclusions.
Sommario/riassunto	This thesis analyses how supersymmetric (SUSY) extensions of the Standard Model (SM) of particle physics can be constrained using information from Higgs physics, electroweak precision observables and direct searches for new particles. Direct searches for SUSY particles at the LHC have not resulted in any signal so far, and limits on the SUSY parameter space have been set. Measurements of the properties of the observed Higgs boson at 125 GeV as well as of the W boson mass can provide valuable indirect constraints, supplementing the ones from direct searches. Precise calculations are performed for Higgs decays and electroweak precision observables within the minimal supersymmetric extension of the Standard Model and the next to-minimal supersymmetric extension of the Standard Model.

Furthermore, a method is presented to reinterpret the LHC limits from direct SUSY searches in more realistic SUSY scenarios. The phenomenological consequences of those results are thoroughly analysed.

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