

Bayesian inference for supersymmetric parameter constraints

Friday 4 July 2008 11:35 (30 minutes)

I will present an up-to-date analysis of the Constrained MSSM, performed using Bayesian inference techniques to perform a global scan of the relevant parameter space. This allows for the first time to derive constraints accounting for all sources of uncertainties and all relevant data, from accelerator bounds to cosmological and astrophysical observations, including direct and indirect detection methods. I will discuss prospects of direct dark matter detection and forecasts for the most probable regions for the neutralino scattering cross sections, showing that a direct detection is feasible with the next generation of dark matter searches. The complementarity of direct searches to collider experiments will be highlighted, and prospects for indirect detection using gamma rays and positron annihilation signatures will be presented. A new publicly available code (see superbayes.org) for a Bayesian analysis of SUSY models will be presented and illustrated with a demo.

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Session Classification: Session 2