Contribution ID: **7**   Type: **Journal club presentation**

Sweet Spot Supersymmetry

Wednesday 4 July 2007 11:00 (1 hour)

We find that there is no supersymmetric flavor/CP problem, mu-problem, cosmological moduli/gravitino problem or dimension four/five proton decay problem in a class of supersymmetric theories with O(1) GeV gravitino mass. The cosmic abundance of the non-thermally produced gravitinos naturally explains the dark matter component of the universe. A mild hierarchy between the mass scale of supersymmetric particles and electroweak scale is predicted, consistent with the null result of a search for the Higgs boson at the LEP-II experiments. We propose a parametrization of the model for the purpose of collider studies. The scalar tau lepton is the next to lightest supersymmetric particle in a theoretically favored region of the parameter space. The lifetime of the scalar tau is of O(1000) seconds with which it is regarded as a charged stable particle in collider experiments. We discuss characteristic signatures and a strategy for confirmation of this class of theories at the LHC experiments.

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Session Classification: Cosmo Coffee