

New Calculations in Dirac Gaugino Models: Operators, Expansions, and Effects

Monday, 24 August 2015 14:30 (20 minutes)

In this work we calculate important one loop SUSY-breaking parameters in models with Dirac gauginos, which are implied by the existence of heavy messenger fields. We find that these SUSY-breaking effects are all related by a small number of parameters, thus the general theory is tightly predictive. In order to make the most accurate analyses of one loop effects, we introduce calculations using an expansion in SUSY breaking messenger mass, rather than relying on postulating the forms of effective operators. We use this expansion to calculate one loop contributions to gaugino masses, non-holomorphic SM adjoint masses, new A-like and B-like terms, and linear terms. We also test the Higgs potential in such models, and calculate one loop contributions to the Higgs mass in certain limits of R-symmetric models, finding a very large contribution in many regions of the μ -less MSSM, where Higgs fields couple to standard model adjoint fields.

Primary author: GOODMAN, Jessica (The Ohio State University)

Co-author: CARPENTER, Linda (Ohio State University)

Presenter: GOODMAN, Jessica (The Ohio State University)

Session Classification: SUSY/String Models

Track Classification: SUSY/String Models