

Combined collider constraints on SUSY with a light gravitino

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I will present the latest physics results from the GAMBIT Collaboration, focusing on a recent study of how the current combined set of LHC SUSY searches and LHC measurements of SM signatures constrain SUSY scenarios with multiple light neutralinos and charginos, and a near-massless gravitino. Through a large-scale global fit, with full Monte Carlo simulations of LHC searches and measurements at each sampled SUSY parameter point, we have investigated how the interplay and complementarity of the many LHC SUSY searches and SM-signature measurements impact this class of non-simplified SUSY scenarios. Our results demonstrate that while much of the parameter space is constrained, there are several still-viable scenarios which predict a phenomenologically rich and detectable sector of multiple sub-TeV neutralinos and charginos, with masses down to around 200 GeV.

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