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Collider constraints on electroweakinos in the presence of a light gravitino with GAMBIT

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Using GAMBIT, we show that present collider data is not only consistent with low-scale supersymmetry, but permits scenarios where the masses of all six neutralinos and charginos of the MSSM are well below a TeV. We constrain the \check{G} -EWMSSM – the MSSM with an eV-scale gravitino as the lightest supersymmetric particle and the six electroweakinos as the only other light new states – using 15 ATLAS and 12 CMS searches at 13 TeV, and a large collection of ATLAS and CMS measurements of Standard Model signatures using Rivet and Contur. We will discuss this new interface and the features it has added to GAMBIT, RIVET and CONTUR.

While much of the \tilde{G} -EWMSSM parameter space is excluded, several viable parameter regions predict phenomenologically rich scenarios where multiple neutralinos and charginos are within kinematic reach of the LHC Run 3 or the High Luminosity LHC.

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