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A Statistical Analysis of the MSSM in the context of Dark Matter and Muon g-2

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The MSSM provides a natural dark matter candidate and an explanation for the 3.5 sigma discrepancy between experimental measurements of the muon's anomalous magnetic moment and Standard Model predictions. By utilizing Monte Carlo Markov Chains, we reconstruct the probability distribution characterize phenomenologically-motivated and theoretically-sound MSSM configurations that satisfy limits set by direct detection searches, g-2, and dark matter relic density measurements. We also determine the utility of limits set by current and future LHC searches for electroweak-inos and for scalar leptons.

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