

Investigating supersymmetry with GAMBIT

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Abstract

Supersymmetry is one of the leading candidate theories for physics beyond the current Standard Model of particle physics. In a series of three studies, the GAMBIT global fitting project have performed the to date most comprehensive statistical analyses of the status of supersymmetric models in particle physics. Through large-scale parameter space analyses, the theoretical predictions of supersymmetric models have been tested against the latest results from a large number of different experiments, ranging from satellite-based experiments looking for dark matter to searches for new particles in particle collisions at the Large Hadron Collider. I will present the results of these studies, highlighting the CPU-expensive aspects of the work and how GAMBIT utilises HPC to overcome the computational challenges.