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Global fits of the MSSM with GAMBIT

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GAMBIT is an open-source and highly modular tool for performing large-scale global fits of BSM theories. We give a brief introduction to GAMBIT and present results from global fits of seven- and nine-dimensional parameterisations of the Minimal Supersymmetric Standard Model (MSSM). We explore the MSSM parameter space in high detail using an efficient differential evolution algorithm. Among other constraints, our fits incorporate direct simulations of LHC sparticle searches (8 TeV and 13 TeV), an up-to-date set of flavour observables and a detailed treatment of direct and indirect dark matter searches. We identify the different mechanisms responsible for keeping the relic density within the allowed range and discuss the discovery prospects for future collider and dark matter searches in light of the parameter regions preferred in our fits.

Author: KVELLESTAD, Anders (Nordita)

Presenter: KVELLESTAD, Anders (Nordita)

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