

Summary studies of the ATLAS Run2 SUSY searches at the LHC

Sveral summary studies of the ATLAS Run 2 SUSY searches at the LHC are presented in this talk, including the recent results on the constraints from the searches performed by the ATLAS Collaboration on the 19-parameter phenomenological minimal supersymmetric standard model (pMSSM-19), statistical combinations of searches for the SUSY particles in various decay channels, and the reinterpretations of the SUSY searches in R-parity-conserving (RPC) scenarios with variable R-parity-violating (RPV) coupling strength models. A novel technique, recastable analysis using a common workflow method, and a new platform, reana (reusable analysis platform), are applied within these summary activities, enabling the publication and realization of the above results. These two technologies also hold broader future applications and can help bridge the gap between theorists and experimentalists.

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