

Phenomenology 2025 Symposium



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Searches for supersymmetric particles with the ATLAS detector

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Supersymmetry (SUSY) provides elegant solutions to several problems in the Standard Model, and searches for SUSY particles are an important component of the LHC physics program. The direct production of electroweak SUSY particles, including sleptons, charginos, and neutralinos, is a particularly interesting area with connections to dark matter and the naturalness of the Higgs mass. Naturalness arguments also favour supersymmetric partners of the gluons and third-generation quarks with masses light enough to be produced at the LHC. This talk will highlight the most recent results of searches performed by the ATLAS experiment for supersymmetric particles, considering both electroweak and strong production modes. With increasing mass bounds on more classical MSSM scenarios other variations of supersymmetry become increasingly interesting. Results for compressed, non-minimal, and R-parity violating scenarios and recent interpretations in the context of the pMSSM are also presented.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

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