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Searches for supersymmetric particles with prompt decays with the ATLAS detector

Monday 8 May 2023 15:15 (15 minutes)

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. This talk will present the latest results from SUSY searches conducted by the ATLAS experiment. The searches target multiple final states and different assumptions about the decay mode of the produced SUSY particles, including searches for both R-parity conserving models and R-parity violating models and their possible connections with the recent observation of the favour and muon g-2 anomalies. The talk will also highlight the employment of novel analysis techniques, including advanced machine learning techniques and special object reconstruction, that are necessary for many of these analyses to extend the sensitivity reach to challenging regions of the phase space.

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