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Status of BSM searches at ATLAS including some future prospects at HL-LHC

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Despite successfully predicting the outcome of hundreds of measurements at colliders and other experiments, the standard model of particle physics cannot be the final theory of nature. Searches for beyond-the-standard model (BSM) physics are now a major component of the research program at the ATLAS and CMS experiments at the Large Hadron Collider (LHC). This talk presents highlights of BSM searches at the LHC, including dark matter, long-lived particles, heavy resonances, leptoquarks, supersymmetric particles, BSM decays of SM particles, and other exotic phenomena. Experimental methodologies, sophisticated analysis tools including machine learning, experimental results, and phenomenological interpretations including Effective Field Theories are presented.

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