

Searches for BSM physics using challenging and long-lived signatures with the ATLAS detector

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Various theories beyond the Standard Model predict new, long-lived particles with unique signatures which are difficult to reconstruct and for which estimating the background rates is also a challenge. Signatures from displaced and/or delayed decays anywhere from the inner detector to the muon spectrometer, as well as those of new particles with fractional or multiple values of the charge of the electron or high mass stable charged particles are all examples of experimentally demanding signatures. The talk will focus on the most recent results using 13 TeV pp collision data collected by the ATLAS detector. Prospects for HL-LHC will also be shown.

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Particle physics

Primary author: ATLAS, speaker to be assigned (ATLAS)

Presenter: GRANCAGNOLO, Sergio (CERN)

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