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Searching for Dark Matter in the Monojet Channel with the ATLAS Detector

Searches for monojet plus missing transverse momentum signatures are sensitive to new phenomena involving invisible particles, such as the pair-production of dark matter, one particularly well motivated possibility. We report on the most recent search for monojet signatures with the ATLAS detector. The effective field theory models typically used for monojet dark matter interpretations have validity limitations. These are addressed both through applying additional constraints, and through a first look at the use of simplified models of dark matter pair-production. Preliminary studies into the impact of future datasets and experimental conditions on monojet dark matter searches provide an idea of what to expect in the coming years.

Summary

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