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Searching for dark matter with the ATLAS detector using unconventional signatures

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The Standard Model (SM) can be considered an effective low-energy expression of a more fundamental theory. There are some observed phenomena not explained by the SM the existence of dark matter (DM) being one of them.
The monotop signature with one top quark and missing transverse energy in the final state can be a powerful probe of specific DM signals. The search for DM can also be done targeting another rare signature, pairs of soft leptons with scattered protons tagged at very small polar angles using the ATLAS Forward Proton tagging detectors (AFP). A search for DM with the ATLAS detector using these unconventional signatures is aimed for.

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