

Search for dark matter production in association with a hadronically decaying vector boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector at LHC

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We present a search for dark matter particles production in association with a hadronically decaying vector boson with 36.1 fb^{-1} of pp collision data at a center-of-mass energy of $\sqrt{s} = 13$ TeV recorded by the ATLAS detector at the LHC. In addition to hadronic decays of W and Z bosons, also the decays of a new non-Standard-Model vector boson Z' of unknown mass are considered here for the first time. The results of the mono-W/Z search are interpreted in terms of limits on the invisible Higgs boson decays into dark matter particles, constraints on the parameter space of the simplified vector-mediator model and generic upper limits on the visible detector-level cross sections for the W/Z+DM production. The results of the mono- Z' search is shown in the frame of several simplified-model scenarios involving the DM production in association with the Z' boson. No significant excess over the Standard Model prediction is observed.

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