

Novel probes of dark matter at the LHC

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Historically searches for dark matter (DM) in colliders have focussed on weakly interacting scenarios, where the experimental signature is so-called mono-X, X being a standard model (SM) particle or a jet. However, recent phenomenological work has also suggested novel signatures emanating from strongly interacting scenarios, one of them is termed semi-visible jets (SVJ). In this case, jets are produced interspersed with DM particles, resulting in a signature of missing transverse momentum aligned with one of the jets, which is an experimentally challenging search. In this talk, I will discuss the first ATLAS result, and also cover multiple pioneering studies our group has performed on SVJ, and touch upon future plans.

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