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Search for dark-sector showering in ATLAS using semi-visible jets

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Recent studies in particle physics have shown that there are myriad possibilities for strong dark sector studies at the LHC. One signature is the case of semi-visible jets, where parton evolution includes dark sector emissions, resulting in jets overlapping with missing transverse energy. Owing to the unusual MET-along-the-jet event topology, this is yet an unexplored domain within ATLAS. In this talk, I will discuss my ongoing ATLAS search, focussing on the performance and optimisation challenges associated with such a unique final state, specifically looking at the angle difference between the hardest jet and the missing transverse energy, and targeting a cut-and-count strategy.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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