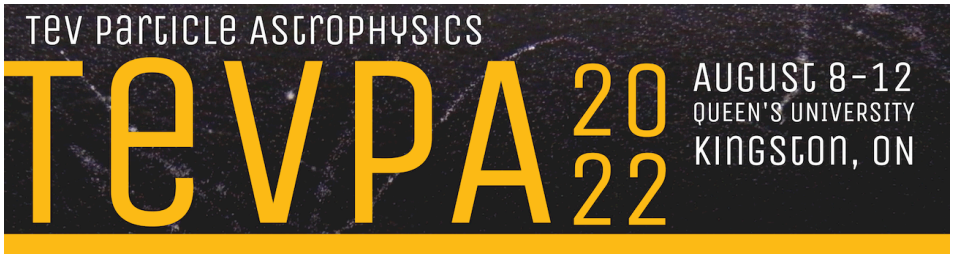

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Searching for inelastic dark matter with future laboratory experiments

Thursday, 11 August 2022 16:50 (20 minutes)

We consider a dark sector containing a pair of almost degenerate states coupled to the Standard Model via a portal interaction. The lightest state can be a dark matter candidate, while the heaviest one is long-lived, and its decays offer new testable signals at accelerator experiments. We study the prospects for the detection of this scenario at proposed LHC experiments (e.g. FASER and MATHUSLA) and at beam-dump facilities. We explore both cases of a light dark photon mediator, and of an heavy (>O(1) TeV) vector portal. We show that future experiments can test large portions of parameter space currently unexplored, and that they are complementary to future High-Luminosity LHC searches.

Collaboration name

Primary author: TAOSO, Marco

Presenter: TAOSO, Marco

Session Classification: Dark Matter

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