

Towards discovery of hidden sector dark matter with liquid xenon TPCs

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The first direct detection limits on sub-GeV dark matter utilized electron counting data from the XENON10 liquid xenon TPC. For over a decade, progress in the sensitivity of these instruments to sub-GeV dark matter has been hampered by delayed electron noise. In this talk, we will show new data indicating the origin of the delayed electron noise and the path to its mitigation. We will conclude with projections for search sensitivity beyond the freeze-in target for hidden sector dark matter candidates.

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