

Annihilation Signatures of Neutron Dark Decay

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We point out that two models that reconcile the neutron lifetime anomaly via dark decays of the neutron, also predict dark matter-neutron ($\bar{\chi} - n$) annihilation that may be observable in neutron-antineutron oscillation and proton decay searches at Super-Kamiokande, Hyper-Kamiokande and DUNE. We study signatures of $\bar{\chi}n \rightarrow \gamma\pi^0$ (or multi- π^0) and $\bar{\chi}n \rightarrow \phi\gamma\pi^0$ (or $\phi + \text{multi-}\pi^0$), where ϕ is an almost massless boson in one of the two models.

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Classification de Session: Dark Matter