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Direct Detection Signals from Absorption of Fermionic Dark Matter

Wednesday, 7 July 2021 09:55 (25 minutes)

In this talk I will present a class of direct detection signals; absorption of fermionic dark matter. I enumerate the operators through dimension six which lead to fermionic absorption, study their direct detection prospects, and summarize additional constraints on their suppression scale. Such dark matter is inherently unstable as there is no symmetry which prevents dark matter decays. Nevertheless, I will show that fermionic dark matter absorption can be observed in direct detection and neutrino experiments while ensuring consistency with the observed dark matter abundance and required lifetime.

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