

Dark Matter interaction with He-4: an EFT approach

Friday, 31 July 2020 08:00 (25 minutes)

I will discuss the possibility of looking for sub-MeV dark matter using superfluid helium-4, employing in particular the recently developed relativistic effective theory for the superfluid phonon to describe the response of the detector to the passing dark matter. Being formulated in a quantum field theory language, this approach is particularly suitable for a particle physics problem. I will apply the formalism to a model of dark matter with both a scalar and vector mediator, and discuss the prospects for these models. I will conclude with future prospects and directions.

I read the instructions

Secondary track (number)

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