

Toward remote sensing of backward reflection from stimulated axion decay

Tuesday 11 November 2025 14:00 (20 minutes)

We propose a method for remotely detecting backward reflection via induced decay of cold dark matter such as axion in the background of a propagating coherent photon field. This method can be particularly useful for probing concentrated dark matter streams by Earth's gravitational lensing effect. Formulae for the stimulated reflection process and the expected sensitivities in local and remote experimental approaches are provided for testing eV scale axion models using broad band lasers. The generic axion-photon coupling is expected to be explorable up to $O(10^{-11})$ GeV and $O(10^{-22})$ GeV for the idealized local and remote setups, respectively [1]. We report on the recent developments toward the pilot search.

[1] K. Homma, JHEP 09 (2024) 034 • e-Print: 2312.02005 [hep-ph]"

Presenter: HOMMA, Kensuke

Session Classification: Parallel session - Experiments II