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Probing new physics from neutrinos at dark matter direct detection experiments

Tuesday, 17 September 2024 16:15 (20 minutes)

Dark matter direct detection experiments like XENONnT, PANDAX-4T and LUX-ZEPLIN are sensitive to solar neutrino-electron scatterings, neutrino-nucleus scattering, and potentially to the Migdal effect. I'll discuss how solar neutrino-electron scatterings allow to constrain the electromagnetic properties of neutrinos, further constraining neutrinophilic light dark sectors. Furthermore, I'll discuss how radioactive sources near these detectors could improve the sensitivity to the anapole moment of neutrinos significantly. Finally, I'll discuss prospects to detect new physics in the neutrino sector via the Migdal effect.

Working Group

WG 5: Neutrinos Beyond PMNS

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