Workshop on Cosmic Indicators of Dark Matter 2024



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Cosmic Birefringence and Spacetime-Symmetry Breaking

Tuesday 15 October 2024 13:50 (40 minutes)

Recently, a CMB signal of parity violation in the form of isotropic cosmic birefringence has been claimed, a signal consistent with being produced through an axion-photon coupling. In this talk, I will introduce a generic EFT constructed for studies of spacetime-symmetry breaking. Focusing on the photon sector, I will show that a CPT-odd EFT term in fact takes the same form as an axion-photon coupling and that the non-zero cosmic-birefringence angle produces the strongest constraint on this EFT coefficient to date.

Presenter: NILSSON, Nils A.