

COLLOQUIUM

Axion searches with gamma-ray telescopes

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Abstract Axions and axion-like particles are well motivated candidates for physics beyond the standard model that could possibly explain the nature of dark matter. They are predicted to oscillate into photons in the presence of external magnetic fields. For typical magnetic fields encountered in galaxies and galaxy clusters, the oscillation probability becomes maximal for axion-like particle masses above ~ 1 nano electron volt at gamma-ray energies. Signatures

of axion-like particles at these energies include a reduced opacity of the Universe for gamma-ray photons, spectral oscillations, as well as gamma-ray bursts from supernova explosions (and possibly binary neutron star mergers). In this talk, I will review how we use present and future gamma-ray telescopes to search for these observables.

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JUNE 2024

3.00 pm (CEST)

Zoom link: <https://stockholmuniversity.zoom.us/j/2461001998>