Contribution ID: **11** Type: **not specified**

Searching for Astrophysical Signatures of ultralight dark matter in pulsars and lensing

Wednesday, 10 December 2025 10:00 (30 minutes)

Ultralight dark matter is an interesting dark matter candidate at the lowest mass end of the dark matter parameter space. One of the predictions of this model is that dark matter halos should have tightly packed O(1) density fluctuations which oscillate on the de Broglie time and length scales. For masses above ~10^18 eV these oscillations occur on observable timescales. In this talk we will discuss recent work describe the effect this would have on pulsar timing arrays (arxiv.org/pdf/2411.18051) and the stochastic lensing of stars (arxiv.org/pdf/2502.20697). The hope is that by characterizing the effect of ultralight dark matter on these observables the increasing sensitivity of new experiments will allow us to probe higher dark matter masses.

Presenter: EBERHARDT, Andrew (Kavli IPMU, U. Tokyo)

Session Classification: Plenary Session