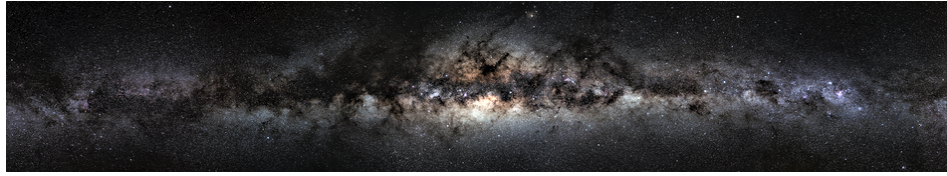


Dark Sectors of Astroparticle Physics (AstroDark-2021): Axions, Neutrinos, Black Holes and Gravitational Waves



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On Microlensing of Axion Clumps

Thursday, 9 December 2021 12:50 (18 minutes)

A sizeable fraction of axion dark matter may be today in galactic halos in the form of Bose-Einstein condensate structures, which are known in the literature as “axion stars” or “axion clumps”. In this talk, I will address main astrophysical features associated with such gravitational bound objects and constraints over their abundance via gravitational microlensing, including finite lens and source size effects. I will consider axion stars composed of the QCD axion as well as axion-like particles. In addition, I will also consider clumps composed of a generic scalar dark matter candidate with repulsive self-interactions. My analysis certainly opens up a new window for the potential discovery of dark matter. This talk is mainly based on arXiv:2109.04283 [hep-ph] and JCAP 01 (2018) 037.

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