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QCD Axion Stars in Cosmology and Astrophysics

Thursday, 6 June 2019 15:45 (15 minutes)

In this talk I discuss QCD axion stars making emphasis on their stability and astrophysical properties. First, I cover the study of Bose-Einstein condensates of axion dark matter. I explain that these condensates form spatially localized clumps. I analyze both the ground state and higher eigenstates coming from finite angular momentum. I also discuss the possibility of these clumps undergo parametric resonance into electromagnetic waves. Then I move to boson stars comprised of a generic scalar dark matter. I analyze the effect of repulsive and/or attractive terms in the self-interacting potential over star parameters and observational outputs.

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