



Contribution ID: 46

Type: **Talk**

Aspects of Dark Matter Axion Clumps

Thursday 26 July 2018 12:40 (25 minutes)

In this talk I begin by reviewing how dark matter axions can undergo Bose-Einstein condensation and why this is captured by classical field theory. I explain that such condensates are spatially localized clumps, as they are organized by gravitation and self-interactions, and they may populate the galaxy. I discuss both the ground state and finite angular momentum states. Also, I comment on using ultra-light axions to resolve the cusp-core problem at the center of galaxies. I then discuss the possibility of parametric resonance of these axion clumps into electromagnetic waves, which may leave an astrophysical signature.

Primary author: Prof. HERTZBERG, Mark (Tufts University)

Presenter: Prof. HERTZBERG, Mark (Tufts University)

Session Classification: 4.2 Plenary

Track Classification: Theory