

Abstract Submitted
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Thermalization of Axions and Axion like Particles NILANJAN BANK, PIERRE SIKIVIE, University of Florida — Cold dark matter candidate axions form a degenerate Bose gas with large correlation length. As a result they thermalize via gravitational self interactions and form a Bose-Einstein condensate (BEC). I will show that thermalization by gravitational self interactions and the subsequent formation of BEC occurs not only for axions but for a broad class of bosons which are created by the vacuum re-alignment mechanism. Thus, besides axions, axion like particles forming a BEC also acquire net overall rotation and form caustic rings in galactic halos.

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