

Abstract Submitted  
for the APR12 Meeting of  
The American Physical Society

**Axion Bose-Einstein Condensation: a model beyond Cold Dark Matter**<sup>1</sup> QIAOLI YANG, Univ. of Florida — Cold dark matter axions form a Bose-Einstein condensate if the axions thermalize. Recently, it was realized that they do thermalize when the photon temperature reaches approximately 500eV. We discuss the differences between axion BEC and CDM in the linear regime and the non-linear regime of evolution of density perturbations. We find that axion BEC provides a mechanism for the production of net overall rotation in dark matter halos.

<sup>1</sup>University of Florida

Qiaoli Yang  
Univ. of Florida

Date submitted: 04 Jan 2012

Electronic form version 1.4