Contribution ID: **7** Type: **Presentation**

Gravitational self-interactions of a degenerate quantum scalar field

Monday 15 May 2017 09:10 (20 minutes)

Axions (and axion-like particles) produced by the vacuum realignment
mechanism in the early universe form a highly degenerate Bose gas
and are a cold dark matter candidate. Dark matter axions thermalize as a result of their gravitational self-interactions when the photon temperature reaches approximately 500 eV. When thermalizing, the axion fluid undergoes Bose-Einstein condensation, a quantum process.
A formalism is introduced to help calculate the outcome of this
process.

Primary author: Prof. SIKIVIE, Pierre (University of Florida)

Presenter: Prof. SIKIVIE, Pierre (University of Florida)

Session Classification: Session 1