Phenomenology 2025 Symposium



Contribution ID: 38

Type: not specified

Axion strings from string axions

Tuesday 20 May 2025 14:00 (15 minutes)

A favored scenario for axions to be dark matter is for them to form a cosmic string network that subsequently decays, allowing for a tight link between the axion mass and relic abundance. We discuss an example in which the axion is protected from quantum gravity effects that would spoil its ability to solve the strong CP problem: namely a string theoretic axion arising from gauge symmetry in warped extra dimensions. Axion strings arise following the first-order Randall-Sundrum compactification phase transition, forming at the junctions of three bubbles during percolation. Their tensions are at the low scale associated with the warp factor, and are parametrically smaller than the usual field-theory axion strings, relative to the scale of their decay constant. Simulations of string network formation by this mechanism must be carried out to see whether the axion mass-relic density relation depends on the new parameters in the theory

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

Authors: LITOS, Christos (University of Florida); CLINE, James (McGill University, (CA)); Dr XUE, Wei (University of Florida)

Presenter: LITOS, Christos (University of Florida)

Session Classification: Dark Matter

Track Classification: Dark Matter Theory and Detection