Contribution ID: **43** Type: **not specified**

Spontaneous Leptogenesis with sub-GeV Axion Like Particles

Wednesday 28 May 2025 15:00 (20 minutes)

A derivative coupling of an axion like particle (ALP) with a B – L current may lead to the baryon asymmetry of the Universe via spontaneous leptogenesis provided a lepton number breaking interaction prevails in thermal equilibrium. Conventionally, such scenario works only for heavy ALPs and high reheating temperature due to the fact that the same lepton number breaking contribution is tied up with neutrino mass generation also. In this work, we propose inert Higgs doublet assisted lepton number violating operator to relieve such tension so as to generate lepton asymmetry (of freeze-in/out type) with a much lower reheating temperature that can accommodate light (sub GeV) ALPs sensitive to current and future ALP searches.

Primary author: SIL, Arunansu (IIT Guwahati, India)

Co-authors: Mr DATTA, Arghyajit (Chonnam National University); Mr MANNA, Soumen Kumar (IIT Guwahati, India)

Presenter: SIL, Arunansu (IIT Guwahati, India)

Session Classification: Baryongenesis