Contribution ID: **58** Type: **not specified**

CMB birefringence from ultra-light axion string networks

Thursday, May 26, 2022 3:02 PM (23 minutes)

If ultra-light axion-like particles exist in nature, they might manifest themselves as a cosmological axion string network that fills the universe today. Such a string network is expected to leave a distinctive imprint on the polarization pattern of the Cosmic Microwave Background radiation. A coupling between axions and electromagnetism causes a photon's plane of polarization to rotate as it passes through the axion string network —a phenomenon known as axion-induced cosmological birefringence. Searches are underway for signs of birefringence in CMB data. Studying this birefringence can reveal valuable information about the axion-photon coupling, the axion mass scale, and the structure and evolution of the string network. In this talk I will discuss recent and ongoing work with collaborators at Rice University where we have focused on improved modeling of the expected signal.

Author: LONG, Andrew (Rice University)

Presenter: LONG, Andrew (Rice University)

Session Classification: Astrophysics