Contribution ID: **96** Type: **Talk**

A Search for Axion Dark Matter with the HAYSTAC Experiment

Thursday 26 July 2018 12:15 (25 minutes)

The Haloscope At Yale Sensitive to Axion CDM (HAYSTAC) is a tunable microwave cavity experiment searching for axion dark matter in the galactic halo through the inverse Primakoff interaction, in which axions in a strong magnetic field are resonantly converted to microwave photons. In 2017, HAYSTAC excluded axion-photon couplings above ˜2x10-14 GeV⁻¹ for the axion mass range 23.15 < m_a < 24.0 mu;eV, and probed new parameter space of interest to both particle physics and cosmology. HAYSTAC is now entering its second phase of operation, incorporating the improvements from the 2017 run with a new squeezed-state receiver and significant upgrades to the cryogenics system. We discuss our recent results, upgrades, the current status of HAYSTAC, and expectations for Phase II.

Authors: Dr SPELLER, Danielle (Yale University); HAYSTAC COLLABORATION

Presenter: Dr SPELLER, Danielle (Yale University)

Session Classification: 4.2 Plenary

Track Classification: Direct Detection