Physics & Astronomy Colloquium

Presents

Steve Lamoreaux

Professor
Yale University

Thursday, April 8, 2021
4:10 pm via Zoom

Meet the speaker at 3:30 pm, join us in welcoming the speaker and for an informal chat!

"Looking for a Needle in the HAYSTAC: Limits on Axion Dark Matter in the 20 micro-eV Mass Range"

The Haloscope at Yale Sensitive to Axion Cold Dark Matter (HAYSTAC) has been operating for several years. Recently, the detector was improved by the incorporation of a squeezed quantum state photon detector, and is among the very first systems, along with LIGO, to use "quantum technologies" to increase the sensitivity. A background discussion of the dark matter will be presented, and a case will be made that the axion is a leading candidate particle, as it has been since the early 1980's but was mostly ignored until recently. The lack of a supersymmetry signal at the LHC and the exquisitely sensitive null results from massive particle dark matter searches, together with new experimental techniques that are available, have now brought the axion into vogue.

Host: Dr. Fred Gittes

Meeting ID: 957 1082 3436 • Passcode: PhysAstro