

Rare Particle Search Results from the LUX Experiment

Wednesday 26 July 2017 14:00 (15 minutes)

The LUX experiment has been searching for direct evidence of rare events including the interactions galactic dark matter. LUX is a 250 kg active liquid-xenon target situated 1.5 km underground at the Sanford Underground Research Facility in Lead, South Dakota (USA).

It is a liquid/gas time projection chamber capable of 3-D position reconstruction and nuclear recoil discrimination. We will present the latest results for analyses based on LUX data taken during the full operations period. These results will include world-leading results in WIMP direct detection based on spin independent and spin dependent couplings, and also using more generalized Effective Field Theory calculations. We will report results from searches for Axion and Axion-like particles. We will also report on searches for evidence of neutrinos with Majorana mass. We can also reported on significant and surprising findings concerning the response of the LUX to electron and nuclear recoil events spanning energies from 170 eV to MeV-scale.

Authors: GAITSKELL, Richard (Brown University); ON BEHALF OF THE LUX COLLABORATION SPEAKER

Presenter: GAITSKELL, Richard (Brown University)

Session Classification: Dark Matter

Track Classification: Dark Matter