

Warsaw Workshop on Non-Standard Dark Matter: multicomponent scenarios and beyond

Contribution ID : 62

Searches for Non-Standard Dark Matter Interactions in the LUX and LZ Detectors

Content :

Although the search for standard, moderate-mass WIMPs continues in earnest across the globe with different detection technologies, the continued lack of a conclusive discovery has encouraged the opening up of other pursuits. This talk will discuss the present capabilities of the world-leading LUX experiment, which has recently published new spin-independent as well as spin-dependent limits, and the future capabilities of its multi-ton-scale successor LZ, in terms of low-mass WIMP nuclear-recoil searches via the ionization channel (S2) in two-phase xenon TPCs. These are made possible through studies of signals of very few electrons, supported with robust new calibration techniques in vivo with DD neutrons, tritium betas, and cosmogenic xenon lines. Lastly, the status of the quest for an electron recoil spectrum or mono-energetic peak from either solar or galactic axions respectively, the axion being a well-motivated non-WIMP dark matter candidate in its own right, will be presented too.

Primary authors : Prof. SZYDAGIS, Matthew (University at Albany)

Co-authors :

Presenter : Prof. SZYDAGIS, Matthew (University at Albany)

Session classification : --not yet classified--

Track classification : --not yet classified--

Type : --not specified--