



Contribution ID: 118

Type: **Parallel talk**

The LUX-ZEPLIN (LZ) Experiment

Tuesday 20 June 2017 17:15 (15 minutes)

The identification of dark matter is presently one of the greatest challenges in science, fundamental to our understanding of the Universe. Weakly Interacting Massive Particles (WIMPs) that arise naturally in several models of physics beyond the Standard Model are compelling candidates for dark matter.

The LUX-ZEPLIN (LZ) collaboration is constructing a massive dark matter detector, to be installed at the 4850 level of the Sanford Underground Research Facility in Lead, South Dakota. The LZ detector will be instrumented as a dual-phase liquid xenon time projection chamber, featuring 5.6 tons of target material in the fiducial region (from a total of 10 tons of xenon). The experiment aims at a baseline sensitivity of $2.3E-48$ cm² for a 40 GeV/c² WIMP mass after 1000 live-days of operation. This represents an improvement of a factor of 50 relative to the current best result set by LUX.

In this talk, we will present an overview of the LZ detector design, planned experimental program (including physics beyond WIMP searches), current project status and timeline.

Presentation type

Parallel talk

Primary author: Dr NEVES, Francisco (LIP - Coimbra)

Co-author: THE LZ COLLABORATION

Presenter: Dr NEVES, Francisco (LIP - Coimbra)

Session Classification: Parallel III