



KCETA Colloquium

Recent results from the LZ experiment and future direct DM searches

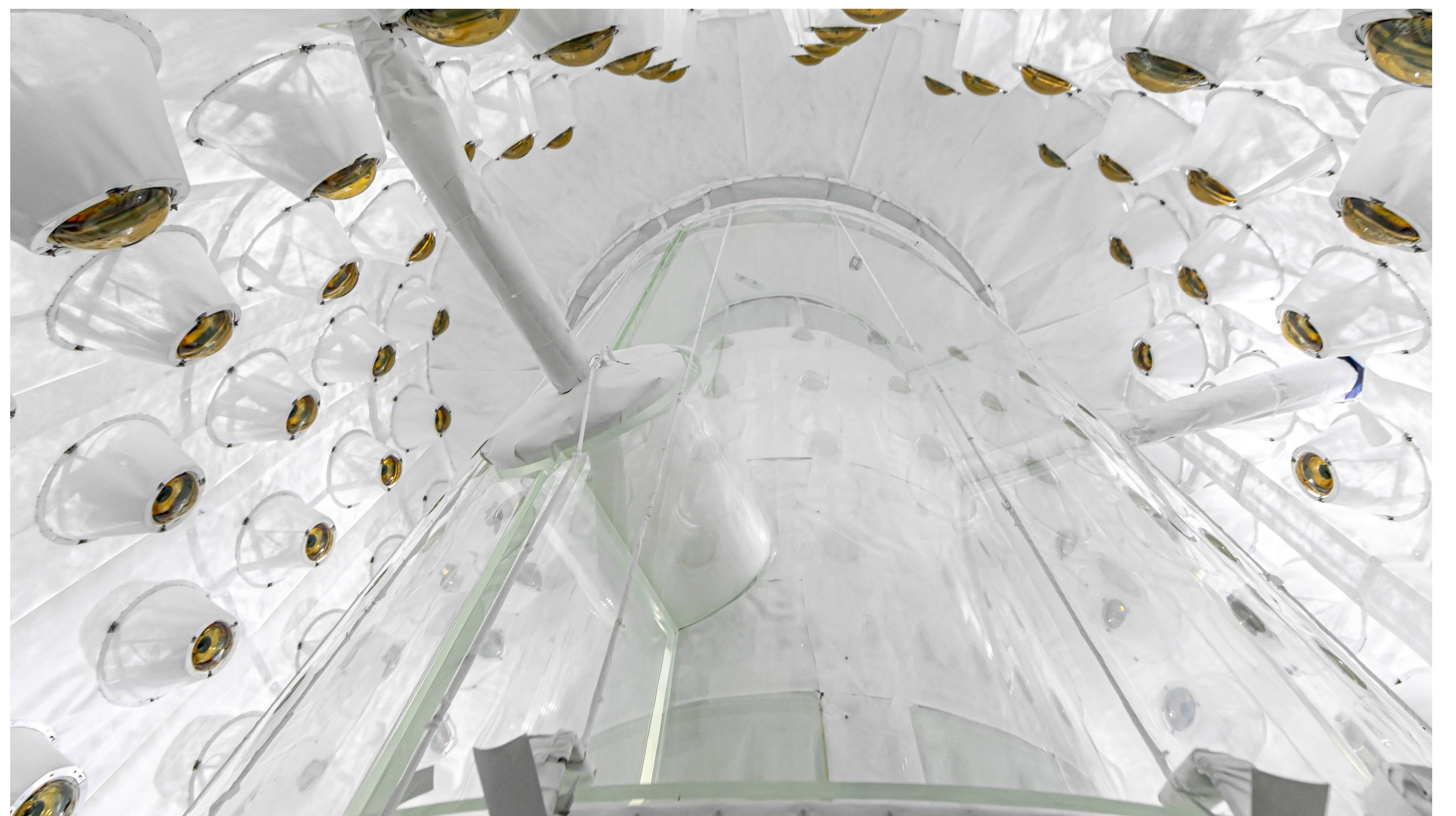
Thursday, February 8, 2024

Kleiner Hörsaal A (CS) 15:45 - 17:00

Prof. Björn Penning
(University of Zürich)

The nature of dark matter (DM) is one of the most important questions in physics. The LUX-Zeplin (LZ) experiment is the most sensitive dark matter search experiment to date, located 1.6 km underground at the Sanford Underground Research Facility. The experiment utilizes a two-phase time projection chamber, containing seven active tonnes of liquid xenon to search for WIMPs. Auxiliary veto detectors, including a liquid scintillator outer detector, improve the rejection of unwanted background events in the central region of the detector. LZ has been designed to explore much of the parameter space available for WIMP models, with excellent sensitivity for WIMP masses between a few GeV and a few TeV.

In this talk, we will report the current status of the LZ experiment and recent results. We will also explore the prospects of two future experiments: Tesseract, a sub-GeV cryogenic dark matter search, and XLZD, a 3rd Generation experiment able to reach the neutrino floor, the ultimate frontier of standard DM searches.



Please note:

The colloquium will also be live-streamed to Seminarraum 224 in Bld. 402 (CN).