Contribution ID: **10** Type: **not specified**

Dark matter search with crystalline xenon

Monday, 27 May 2024 09:30 (30 minutes)

Direct dark matter search experiments aim to detect rare events when a candidate dark matter particle scatters off a target. Ultra-low background is essential for such an effort. State-of-the-art liquid xenon time projection chambers (TPC) employ various effective methods to suppress and discriminate against background signals. The dominant background remaining is the Pb beta decay from the Rn chain, which limits our discovery sensitivity. A crystalline xenon TPC is a promising novel technology for next-generation dark matter search, as it could exclude and tag radon-chain backgrounds while maintaining the instrumental benefits of liquid xenon TPC. This talk will discuss instrumental performance as well as recent results to demonstrate the radon exclusion power of crystalline xenon with respect to liquid xenon.

Primary authors: Dr SORENSEN, Peter (Lawrence Berkeley National Laboratory); Dr XIA, Qing (Lawrence Berkeley National Laboratory); GIBBONS, Ryan (Lawrence Berkeley National Laboratory); Dr HASELSCHWARDT, Scott (Lawrence Berkeley National Laboratory); Dr KRAVITZ, Scott (The University of Texas at Austin); 昊, 陈 (复旦大学-现代物理研究所)

Presenter: 昊, 陈 (复旦大学-现代物理研究所)

Session Classification: Dark Matter Direct Detection