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CrystaLiZe: Pushing Dark Matter Detection to the Limit with Solid Xenon

Tuesday, 7 November 2023 14:10 (20 minutes)

We present the crystalline xenon time projection chamber (TPC), a promising novel technology for next-generation dark matter searches. Initial tests have established that it maintains many of the benefits of the liquid xenon TPC while also effectively excluding radon, the dominant background in currently-running xenon dark matter experiments such as LZ. This offers the potential for greatly improved sensitivity to dark matter through a crystal xenon upgrade to an existing experiment. This talk will discuss instrumental performance, comparison with respect to liquid phase detectors, and plans for establishing its scalability.

Early Career

Yes

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Track Classification: RDC Parallel Sessions: RDC1: Noble Element Detectors