

The measurement of Krypton in Xenon with ppq sensitivity

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Krypton-85 beta decay is a significant background for liquid-xenon time projection chambers used in dark-matter searches. As the concentration of krypton in xenon reaches lower levels in current and next-generation detectors, the direct measurement of trace krypton in xenon becomes increasingly challenging. I report on the development of an enhanced krypton-concentration measurement technique that combines xenon freezing with ion counting to achieve a projected sensitivity better than one part per trillion.

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