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(G*) Cryogenic Distillation for Xe Isotopic Enrichment

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Neutrinoless double beta decay (NLDBD) is one of the most important searches in particle physics nowadays. If discovered, it may help to answer some of the unanswered questions in physics, shedding light on the neutrino masses and helping explain the origin of matter in the universe. One of the most promising isotopes to search for NLDBD is ^{136}Xe . The only existing method in the market for enrichment of xenon is centrifugation. Cryogenic distillation is a proposed alternative that depends on the relative vapour pressure of the different xenon isotopes.

This talk presents the first reliable measurement of the xenon vapour pressure differences performed with a 1.8-m tall distillation still at Carleton University, and the ongoing work with an eightfold taller still at SNOLAB in Sudbury, Ontario.

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