

# Demonstrating Parts Per Quadrillion Sensitivity of Krypton in Xenon gas

*Thursday, 19 July 2018 16:00 (15 minutes)*

Krypton 85 is a long lived source of electron recoil backgrounds in LUX-ZEPLIN (LZ), a large scale 2-phase liquid xenon time projection chamber (TPC). Being a noble gas makes krypton difficult to remove using getters, and its long half life compared to the livetime of LZ (5 years), means that krypton impurities must be measured and tracked throughout xenon preparation, and use in the detector. The concentration of krypton must remain below the allowed concentration of 15 ppq. This talk outlines the motivation, equipment, and procedure to quantify ppq levels of krypton impurities.

**Primary author:** SILK, John

**Presenter:** SILK, John