Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Krypton Measurements at Katrin LARISA THORNE, Carnegie Mellon University, KATRIN COLLABORATION — The Karlsruhe Tritium Neutrino (Katrin) experiment aims to make a precision measurement of the neutrino mass, which is buried within the endpoint of the tritium beta decay spectrum, with a design sensitivity of 0.2ev (90% c.L.). Krypton (83mkr) is introduced into the system as a gaseous or a condensed solid source, and is used for calibration and systematic studies of the entire Katrin beamline. Krypton is the ideal candidate for these tasks because it is an isotropic source of conversion electrons with well-defined energies (˜17- 32 kev range) and narrow (˜few ev) linewidths, and has a half-life of 1.8 hours which is long enough for spectroscopic studies but short enough to prevent permanent beamline contamination. We present here a summary of early results from the first Katrin Krypton measurement campaign.

Larisa Thorne
Carnegie Mellon University

Date submitted: 29 Jun 2017 Electronic form version 1.4