Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

The Cross Section of Xenon-134 PEYTON BROWN, None — In neutrinoless double beta decay experiments, Xenon-136 is an isotope often used. These sources, however, contain significant amounts of Xenon-134, an isotope that has no recorded cross-section. Additionally, the de-excitation of a particular nuclear state of Xenon-134 almost mimics the estimated Q-value of the neutrinoless double beta decay of Xenon-136. So, to improve the clarity of $0\nu\beta\beta$ experiments this project focuses on creating a cross-section for Xenon-134. This was achieved by activating a source of Xenon-134 in gas cells at Triangle Universities National Laboratory (TUNL) and using clover detectors to analyze the decay. This will allow for an in depth look at the background of Xenon-134 which will provide insight into all $0\nu\beta\beta$ experiments that contain Xenon-136.

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None

Date submitted: 01 Aug 2017 Electronic form version 1.4