DNP17-2017-000446

Abstract for an Invited Paper
for the DNP17 Meeting of
the American Physical Society

Double-beta Decay Searches in ^{130}Te

LINDLEY WINSLOW, Massachusetts Inst of Tech-MIT

The neutrino is unique among the Standard Model fermions. It is the only one that could be its own antiparticle, a Majorana particle. A Majorana neutrino would acquire mass in a fundamentally different way than the other particles and this would have profound consequences to particle physics and cosmology. The only feasible experiments to determine the Majorana nature of the neutrino are searches for the rare nuclear process neutrinoless double-beta decay. ^{130}Te is an attractive isotope for these experiments because of its high natural abundance. These are very difficult experiments and it is still not clear which techniques are the best to pursue. The CUORE and SNO+ experiments are excellent examples of the range of techniques that can be pursued while using the same isotope. In this talk, I will present the latest results from these experiments.