

DNP20-2020-020140

Abstract for an Invited Paper
for the DNP20 Meeting of
the American Physical Society

Neutrinoless double beta decay and the search for neutrino mass

ERIN HANSEN, Department of Physics, UC Berkeley

Despite years of intense focus, there is much still to learn about neutrinos. For example, the absolute neutrino mass scale and potential Majorana masses are still unknown, requiring exploration of physics beyond the Standard Model. This talk will highlight a selection of current and future efforts focused on the absolute neutrino mass through measurements of the tritium β -energy spectrum. Additionally, searches for neutrinoless double beta decay have moved to the ton-scale, spanning the isotopes available to undergo this rare process and providing information about Majorana masses of neutrinos. I will discuss advances in hardware and software techniques from several experiments including CUORE, which searches for $0\nu\beta\beta$ in ^{130}Te using a bolometric array of TeO_2 crystals and is currently taking data at Gran Sasso National Laboratory (LNGS).