

Abstract Submitted
for the SES20 Meeting of
The American Physical Society

Recent Results from EXO-200 TIMOTHY DANIELS, University of North Carolina Wilmington, EXO-200 COLLABORATION — The detection of neutrinoless double-beta decay ($0\nu\beta\beta$) would confirm the Majorana nature of neutrinos and shed light on the neutrino mass scale. The EXO-200 experiment employs 110 kg of active xenon enriched to 80.6(TPC) in a $0\nu\beta\beta$ search. Located underground at the Waste Isolation Pilot Plant (WIPP) outside Carlsbad, NM, the experiment collected data in two phases between May 2011 and December 2018. Analysis of the resulting 234.1 kg-yr dataset results in a lower limit on the $0\nu\beta\beta$ half-life of 3.5×10^{25} yr at the 90level. The sensitivity of this low-background experiment is enhanced by the TPC technique, which exploits the anticorrelation of the ionization and scintillation signals and uses topological information to discriminate between beta-like signal events and gamma-ray backgrounds. Additional recent results, including measurements of ^{137}Xe beta-decay and liquid-xenon scintillation and ionization yields, will also be discussed

Timothy Daniels
University of North Carolina Wilmington

Date submitted: 20 Oct 2020

Electronic form version 1.4