

Abstract Submitted  
for the DNP08 Meeting of  
The American Physical Society

**The Majorana Neutrinoless Double-Beta Decay Experiment**

JAMES FAST, Pacific Northwest National Lab, MAJORANA COLLABORATION  
— The objective of the MAJORANA collaboration is to study neutrinoless double beta decay  $\beta\beta(0\nu)$  with an effective Majorana neutrino mass sensitivity near 100 meV in order to characterize the Majorana or Dirac nature of the neutrino, the Majorana mass spectrum, and the absolute mass scale. The MAJORANA experiment will consist of a large mass of  $^{76}\text{Ge}$  in the form of high-resolution intrinsic germanium detectors located deep underground within a ultra-low-background shielding environment. The experiment will use a phased deployment approach with a final mass target of order 1 tonne. The first phase, the MAJORANA DEMONSTRATOR, will deploy 60-kg of germanium detectors with the dual goals of demonstrating background levels suitable for a tonne-scale experiment and testing the Klapdor-Kleingrothaus result (Modern Physics Letters A, Vol. 21, No. 20 (2006) 1547-1566). An overview and status update of the MAJORANA experiment will be presented in this talk.

James Fast  
Pacific Northwest National Lab

Date submitted: 25 Jun 2008

Electronic form version 1.4