Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Results from EXO-200 ANDREA POCAR, University of Massachusetts, Amherst — The Enriched Xenon Observatory (EXO) is an experimental program searching for neutrinoless double beta decay using Xe-136. Observation of this lepton number violating decay would demonstrate that neutrinos are Majorana particles and allow determination of the absolute neutrino mass scale. The first stage of the experiment, EXO-200, consists of an extremely low background time projection chamber containing ∼150 kg of liquid xenon enriched to 80% Xe-136. EXO-200 has been taking data continuously since May 2011 and has previously reported the first observation of two neutrino double beta decay (2vbb) in Xe-136 as well as stringent constraints on the neutrinoless mode. We will present recent results from EXO-200, including an improved measurement of the 2vbb half-life in Xe-136, which is the most precisely measured half-life for any 2vbb decay reported to date and give a status report on the 0vbb search. As time allows, we will discuss the status of nEXO, the planned multi-tonne scale successor to EXO-200.

Andrea Pocar
University of Massachusetts, Amherst

Date submitted: 22 Jul 2013 Electronic form version 1.4