Name = Martin Surname = Auger Nationality = Canadian Institution = LHEP, Bern University Address = Sidlerstrasse 5 Town = 3012, Bern, Bern Country = Switzerland e-mail = <u>martin.tartin@gmail.com</u> Abstract = Authors: EXO Collaboration

Title: EXO-200 and R&D prospects

Abstract (less than 10 lines):

EXO-200 (Enriched Xenon Observatory - 200 kg) is an underground doublebeta decay experiment that uses 200kg of Xenon isotopically enriched to 80% in Xe-136. The Xe is contained in an ultra-low background TPC where there is simultaneous collection of scintillation light and ionization charge in order to significantly enhance the energy resolution. EXO-200 should measure the, as yet unobserved, two neutrino double-beta decay mode as well as achieve competitive sensitivity for the neutrinoless double-beta decay mode of Xe-136. EXO-200 is currently undergoing final construction and commissioning at WIPP (USA). The EXO collaboration is conducting R&D towards the construction of a next-generation ton-class detector. A high-resolution micropattern readout system is being studied in Bern. The scheme offers full tracking capabilities and 3D event reconstruction for possible application in a future gas-phase EXO detector.