



Contribution ID: 380

Type: **Poster**

Background Modeling for LEGEND-200

Wednesday, August 30, 2023 3:39PM (1 minute)

LEGEND-200 is the first phase of LEGEND, a ^{76}Ge -based experiment designed to observe a lepton number violating process: neutrinoless double-beta ($0\nu\beta\beta$) decay. Observation of this process would demonstrate neutrinos to be Majorana particles. The first 101 enriched ^{76}Ge detectors, with a total mass of 142 kg, have been installed and are currently taking data at the Laboratori Nazionali del Gran Sasso (LNGS), Italy. A comprehensive simulation campaign is underway to study and model the background contributions from various components in the experimental setup. In this poster, we will present the current results of the simulation campaign as well as a preliminary background model for the LEGEND-200 experiment.

This work is supported by the U.S. DOE and the NSF, the LANL, ORNL and LBNL LDRD programs; the European ERC and Horizon programs; the German DFG, BMBF, and MPG; the Italian INFN; the Polish NCN and MNiSW; the Czech MEYS; the Slovak SRDA; the Swiss SNF; the UK STFC; the Russian RFBR; the Canadian NSERC and CFI; the LNGS, SNOLAB, and SURF facilities.

Submitted on behalf of a Collaboration?

Yes

Author: Mr GALA, Rushabh (North Carolina State University, USA)

Co-author: GREEN, Matthew (NC State University)

Presenter: Mr GALA, Rushabh (North Carolina State University, USA)

Session Classification: Poster session

Track Classification: Neutrino physics and astrophysics