

The Status of the MAJORANA DEMONSTRATOR

ABSTRACT

The MAJORANA DEMONSTRATOR is being constructed to search for neutrino-less double-beta decay ($0\nu\beta\beta$) of ^{76}Ge , while establishing the cost and feasibility of a future tonne-scale experiment, and while also searching for new physics beyond the Standard Model. The experiment is currently under construction at the Sanford Underground Research Facility in Lead, South Dakota. It will consist of two modular arrays of high-purity Ge detectors inside of a shield of copper inside of lead and polyethylene. The planned total detector mass is 60-kg, with between 25 and 32-kg of Ge enriched to 86% in ^{76}Ge . Utilizing a combination of material screening for low radioactivity, and powerful background rejection techniques, the experiment is designed to achieve a background rate in the ($0\nu\beta\beta$) region of interest (ROI) of no more than three counts per ROI per year per tonne. The status of the experiment and the plan for completion will be discussed.