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SuperNEMO - the next generation double beta decay experiment

The SuperNEMO experiment is being designed to search for neutrinoless double beta decay to test if neutrinos are Majorana particles. The unique experimental technique follows that of the currently running NEMO-3 experiment, which successfully combines tracking and calorimetry to measure the topology and energy of the final state electrons. SuperNEMO will employ about 100kg of 82Se to reach sensitivity to a half-life time of about 2*10ˆ26 years, which corresponds to Majorana neutrino masses of about 50 meV, and depends on the calculated value of the nuclear matrix element. The construction of the demonstrator module with 5kg of 82Se is about to begin and, if successful, will be followed by 19 more of similar modules. We will present the current status of the SuperNEMO project including results of the R&D phase of the project.

Summary

We will show details of the R&D results on calorimetry, tracking, and natural radioactivity studies.

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