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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 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. Unique particle identification capabilities of SuperNEMO will be employed with about 100 kg of 82Se and will reach sensitivity to a half-life time of about 2*10*26 years, which corresponds to Majorana neutrino masses of about 50 meV, depending on the calculated value of the nuclear matrix element. The construction of the 'demonstrator' module with about 5 kg of 82Se is expected to commence in 2010, and, if successful, will be followed by 19 more of similar modules. In this talk, we will present the current status of the SuperNEMO project.

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