



Poster session 4 – Friday 8 July

P4.072 Construction and commissioning of the SuperNEMO demonstrator module tracker

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The SuperNEMO experiment will search for neutrinoless double beta decay in the Modane Underground Laboratory. This decay mode, if observed, would be proof that the neutrino is its own antiparticle, would constitute evidence for total lepton number violation, and could allow a measurement of the absolute neutrino mass. The SuperNEMO experiment is designed to reach a half-life sensitivity of 10^{26} years corresponding to an effective Majorana neutrino mass of 50–100 meV.

The SuperNEMO demonstrator module is the first stage of the experiment, containing 7 kg of ^{82}Se , with an expected sensitivity of $T_{1/2}(0\nu) > 6.6 \times 10^{24} \text{y}$ after 2.5 years. Full topological event reconstruction is achieved through the use of a wire tracker operating in Geiger mode combined with scintillator calorimeter modules. Construction of the demonstrator module is well underway. We present the design of the tracker, and the current status of the construction and commissioning efforts.