



Poster session 4 – Friday 8 July

P4.042 The SuperNEMO Calorimeter

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The SuperNEMO double beta decay project is a modular tracker-calorimeter based experiment that will reach a sensitivity to the neutrinoless double beta decay half-life of the order of 10^{26} years, corresponding to a Majorana neutrino mass of 50-100 meV. The main calorimeter is based on 520 Optical Modules made of large volume plastic scintillators (10L) coupled with large area photomultipliers (Hamamatsu R5912-Mod and R6594). They are assembled in walls that surround the isotope foil and the tracking volume.

One of the main goals and challenges of the SuperNEMO detector development programme was to reach an energy resolution, better than $8\%(\text{FWHM}) / \sqrt{E} (\text{MeV})$. The other challenge was to satisfy the radiopurity requirements for all the calorimeter materials.

This poster will describe the calorimeter design, its performances and the status of its construction as the first module of SuperNEMO is now under construction and installation in LSM (Laboratoire Souterrain de Modane) underground laboratory.