

## **Development of the tracking detector for SuperNEMO and analysis of double-beta decay in $^{48}\text{Ca}$ using NEMO3 data.**

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SuperNEMO is a low background experiment with the aim of observing neutrinoless double beta decay, an extremely rare nuclear decay which is the only known method for determining whether neutrinos are Majorana or Dirac particles. The detector comprises tracker and calorimeter submodules, the former currently being built in the UK. This talk will focus on the effort towards the development of the low background tracker, in particular its gas mixing system and the very stringent requirements on the emanation of  $^{222}\text{Rn}$  into the tracking volume. A study of the ageing of the tracking chamber will also be presented. Finally, a preliminary analysis of the double-beta decay of  $^{48}\text{Ca}$  will be shown.

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