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Search for neutrinoless double beta decay with NEMO-3

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The NEMO-3 experiment located in the Modane Underground Laboratory is searching for neutrinoless double beta decay. The experiment has been taking data since 2003 with seven isotopes. The main isotopes are 7kg of ^{100}Mo and 1kg of ^{82}Se . The new results with 4 years of data taking will be presented for ^{100}Mo . No evidence for neutrinoless double beta decay has been found to date. The data are also interpreted in terms of alternative models, such as weak right-handed currents or Majoron emission. We will show results for the standard model double beta decay process for all seven isotopes employed in NEMO-3, in particular ^{150}Nd , an isotope of special interest due to its potential use in future experiments, as well as ^{96}Zr and ^{116}Cd will also be presented. These measurements are important for reducing the uncertainties on nuclear matrix elements.

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