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Search for double beta decay with NEMO-3

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The NEMO-3 experiment located in the Modane Underground Laboratory (LSM)
is searching for neutrinoless double beta decay. The experiment
has been taking data since 2003 with seven isotopes.
The main ones are 7 kg of 100Mo and 1 kg of 82Se.
Data from the initial phase of the experiment show no evidence
for neutrinoless double beta decay which permits setting a 90% CL
lower limit on the half-life time for such a transition.
From these results we can determine an upper limit on the effective
Majorana neutrino mass. NEMO-3 also measures two-neutrino
double beta decays for other isotopes and has
reached the highest precision measurements to date. We will
present the latest results for 150Nd, 130Te, 48Ca and 96Zr.
Such measurements are important for reducing
the uncertainties on calculations for nuclear matrix elements.
NEMO-3 data can also be interpreted in terms of alternative
transition models, such as weak right-handed currents
or Majoron emission.

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