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Search for neutrinoless double beta decay with NEMO-3 and SuperNEMO

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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 a range of isotopes.
The main isotopes are ˜ 7 kg of 100Mo and ˜ 1 kg of 82Se.
Since no evidence for neutrinoless double beta decay has been found,
a 90% Confidence Level lower limit on the half-life of this process is derived.
From this we determine an upper limit on the effective Majorana neutrino
mass using nuclear matrix elements.
The data are also interpreted in terms of alternative models, such
as weak right-handed currents or Majoron emission.
In addition, NEMO-3 has performed precision measurements of the double beta
decay process with two neutrinos emitted in the final state.
Measurements of this process are important
for reducing the uncertainties on the nuclear matrix elements.
The most recent experimental results will be presented.

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