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Type: **Ordinary**

Searches for Beyond the Standard Model Physics in Double Beta Decay with EXO-200

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EXO-200 is an experiment searching for neutrinoless double beta decay using a time projection chamber with 175 kg of liquid xenon enriched in ^{136}Xe . The observation of this process would indicate that the neutrino is a Majorana fermion and lepton number is not a conserved quantity, and would allow for the calculation of the absolute mass of the neutrino. The low radioactive background and high sensitivity of the experiment also provide a venue to search for other theoretical exotic processes. Majoron modes of double beta decay are processes that would occur if the neutrino is a Majorana fermion and a scalar boson is created in the neutrino self interaction, resulting in an electron sum spectral shape that deviates from the standard two-neutrino double beta decay spectrum. The latest analysis techniques and results of searches for neutrinoless double beta decay and other exotic processes in EXO-200 will be presented.

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Classification de Session: Neutrino Physics

Classification de thématique: Experiment