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Neutrinoless double beta decay searches at the Gran Sasso National Laboratory

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One of the fundamental open questions in elementary particle physics is the value of the neutrino mass and its nature of Dirac or Majorana particle.

Neutrinoless double beta decay is a key tool for investigating these neutrino properties and for finding answers to the open questions concerning mass hierarchy and mass scale ordering.

In this contribution, an overview of the different experimental approaches to search for neutrinoless double beta decay will be given. Particular attention will be devoted to the current experiments that are being operated or under construction at the Gran Sasso National Laboratory.

The next generation experiments, which aim to further improve the sensitivity on the neutrinoless double beta decay half life, will be also presented

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