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# Double Beta Decay Overview

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Abstract: Observation of neutrinoless double beta decay would be a break through in particle physics, astroparticle physics and cosmology, as it would imply lepton number violation, establish the Majorana character of neutrinos and shed light on the evolution of the early Universe. Current experiments have half-live sensitivities up to several 1025 yr probing part of the parameter space predicted for degenerate neutrino masses. The next generation experiments aim to scrutinize half-lives up to 1027–1028 years range or effective Majorana mass of O(10 meV), as predicted by neutrino oscillation experiments in case of inverse mass ordering. I will review the latest experimental results and discuss the future projects with their projected experimental performances and sensitivities. Critical parameters as sensitive exposure, backgrounds will be compared amongst future projects and with the experimental state-of-the-art.

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**Session Classification:** Double Beta Decay Overview