



Friday 8 July, 09:00 – 09:25

Session 13: Neutrino properties I: searches for neutrinoless double beta decay

### Looking for lepton number violation

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The violation of lepton number is predicted in many new physics scenarios and it is tightly connected to the potential Majorana character of neutrinos; searching for lepton number violation (LNV) therefore constitutes a crucial pathway to physics beyond the Standard Model. In my talk, I will provide a review of the theoretical aspects of LNV and Majorana neutrinos. I will try to illuminate what consequences the observation of LNV would have on new physics scenarios, specifically on neutrino mass and baryogenesis mechanisms. I will furthermore survey the phenomenology of relevant experimental searches, both at low energies and at high energy colliders such as the LHC. Here I will focus on the role of the nuclear process of neutrinoless double beta decay and its impact on neutrino physics.