

Bigger or Colder: Majorana Neutrinos and the Search for Neutrinoless Double-Beta Decay

The neutrino is unique among the Standard Model particles. It is the only particle that could be its own antiparticle, a Majorana particle. A Majorana neutrino would acquire mass in a fundamentally different way than the other particles and this would have profound consequences to particle physics and cosmology. The only feasible experiments to determine the Majorana nature of the neutrino are searches for the rare nuclear process neutrinoless double-beta decay. These are very difficult experiments and it is still not clear which techniques are the best to pursue. In this talk, I will highlight recent results from KamLAND-Zen and CUORE as well as the experimental challenges involved in searching for neutrinoless double-beta decay.