The discovery of $0\nu\beta\beta$ has profound implications for the Standard Model, as it would prove the existence of a new type of particle, Majorana fermions, and show that lepton number conservation is violated. Moreover, it provides hints for more beyond the Standard Model physics, possibly allowing for a different mass generation mechanics (other than Higgs) and the introduction of GUT-scale heavy, right-handed neutrinos.

nEXO is a 5 tonne LXe TPC planned to search for the neutrinoless double beta decay of $\text{Xe}^{136}$ with a target half-life sensitivity of approximately $10^{28}$ years, which is achievable through careful material selection, an improved design of the TPC and a multi-dimensional analysis and event reconstruction. MC simulations derive a sensitivity to the effective Majorana neutrino mass between 5.7 and 17.7 meV on a 90% C.L. depending on the nuclear matrix element calculation after 10 years of live time.

Lunch is served outside of WLC-245 starting at 11:45 a.m. RSVP requested.

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