nEXO: New Physics with Neutrinoless Double-Beta Decay

Research Overview

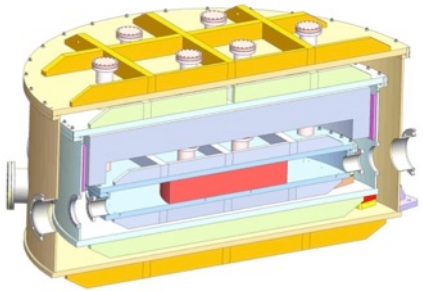
Design and develop nEXO experiment: 5-ton ultra-low-background liquid-Xe Time Projection Chamber (TPC).

nEXO searches for $\beta\beta0\nu$ in ^{136}Xe to discover lepton number violation and understand neutrino nature and mass

Potential Collaborations

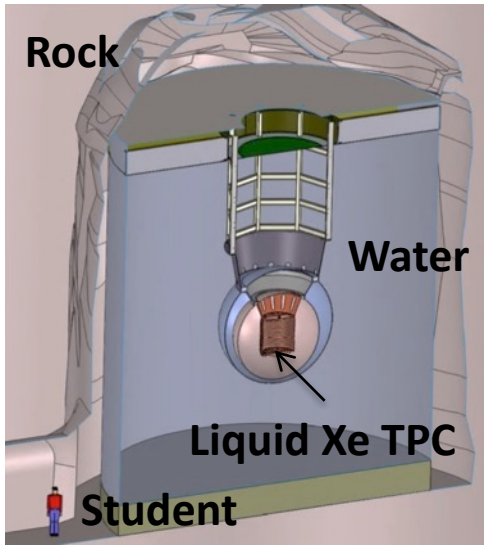
- **Monte Carlo simulations (LLNL-led)**
- **Develop novel background reduction techniques in liquid Xe**
- **Investigate High Voltage breakdown in liquid Xe**

nEXO Test Bed



(to be installed at LLNL in 2017)

nEXO Experiment



nEXO Collaboration

Exciting environment for students:

- **Large international collaboration**
- **LLNL leadership role**
- **Key R&D activities**

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