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## **XLZD beyond WIMPs: Neutrino-less double beta-decay and More!**

*Tuesday 29 August 2023 15:00 (15 minutes)*

A future liquid xenon TPC of the scale of many tens of tonnes, capable of detecting the atmospheric ‘neutrino fog’, will have sensitivity to multiple physics signals besides WIMP dark matter. Here we will discuss the opportunities for neutrino physics, including neutrino-less double beta-decay with  $^{136}\text{Xe}$  and double electron capture measurements of  $^{124}\text{Xe}$ , as well as astrophysical neutrino sources. Other exotic physics searches for solar axions, fractionally charged particles, multiply-interacting massive particles, and others, can also be conducted with a xenon observatory. The implications for the detector design and operations of these broader physics channels will be discussed.

### **Submitted on behalf of a Collaboration?**

Yes

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**Session Classification:** Dark matter and Neutrino

**Track Classification:** Neutrino physics and astrophysics