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## **Planning the future DARWIN/XLZD observatory - WIMP sensitivity goals and detector R&D**

*Tuesday 29 August 2023 16:00 (15 minutes)*

The DARWIN collaboration is currently designing a detector for high-mass WIMP dark matter with sensitivity to the neutrino fog. The project has the support, in the framework of the new XLZD consortium, of the XENONnT and the LZ collaborations, who are operating the currently most sensitive detectors of this type. With a planned target mass of 40 tonnes of liquid xenon (LXe), the DARWIN detector will probe the remaining accessible parameter space for high-mass WIMPs, and will also be sensitive to solar and supernova neutrinos. A target mass goal of 60 tonnes LXe, which will be the new design baseline if DARWIN becomes realised within XLZD, would further increase the sensitivity. This presentation focuses on the WIMP sensitivity, and on the R&D projects ongoing to make this detector a reality.

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

Yes

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