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DARWIN, a next-generation observatory for dark matter and neutrino physics

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The nature of dark matter is still a mystery in physics and the detection of particle dark matter has eluded experiments for decades. DARWIN is a next-generation liquid-xenon-based experiment that plans to reach a dark matter sensitivity limited by the cosmic neutrino background. With a proposed active target of 40 t of liquid xenon, ultra-low radioactive background, and keV-level threshold, the physics programme of DARWIN extends beyond searches for dark matter to other rare-event searches and neutrino physics. The project might be realised within the context of the newly-formed XLZD consortium. In this talk, I describe the baseline experimental design of the DARWIN observatory, its science programme, its current status, and the ongoing R&D efforts of the project.

Collaboration / Activity

DARWIN

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