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【383】XENONnT: The next stage in the search for dark matter with liquid xenon

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XENONnT, the next stage in the XENON collaboration's search for dark matter, ist is an evolution of the very successful XENON1T experiment, which has set the strongest limits on various channels of WIMP-nucleus interactions and observed double-electron capture in ^{124}Xe for the first time. A larger detector will mean a much-increased exposure and better self-shielding, giving sensitivity to smaller dark matter interaction cross-sections. Innovations in xenon handling will allow a substantial background reduction, with in particular the ^{222}Rn background being roughly ten times lower. Furthermore, a new neutron veto can tag at least 80% of singly-scattered neutrons, which until now formed an almost irreducible background. XENONnT is currently under construction with commissioning planned to start at the end of 2019.

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