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【366】 DARWIN: a next-generation multi-ton xenon observatory

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The DARWIN experiment is a next-generation dual-phase time projection chamber which will operate 50 tonnes of natural xenon and whose primary goal will be to explore the entire experimentally accessible parameter space for WIMPs. Besides its unprecedented sensitivity to WIMPs, such a large detector, with its low-energy threshold and ultra low background level, will also be sensitive to other rare interactions like the neutrinoless double beta decay of ^{136}Xe . In addition, DARWIN will be able to measure low energy solar neutrinos, observe the coherent neutrino-nucleus interaction and detect galactic supernovae. We discuss here the concept of DARWIN and the sensitivity for the different physics channels.

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