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Experimental efforts in pursuit of direct detection of cosmic dark matter

Friday, 16 June 2023 09:00 (30 minutes)

Dark matter is a cornerstone of modern cosmology, and its identification is widely expected to reveal physics beyond the Standard Model. A wealth of well-motivated theories predicts new particles that could account for the dark matter content of the universe, and which may be detected by Earthly detectors. In this talk, I will review the most common methods used to search for possible kinetic energy transfer from cosmic dark matter to atoms in particle detectors, and the sensitivities demonstrated by these 'direct detection' experiments. I will also discuss the challenges and limitations facing these experiments, and R&D that may lead to more sensitive searches in future efforts. (Prepared by LLNL under Contract DE-AC52-07NA27344. LLNL-ABS-846609.)

Secondary category for the parallel session (optional)

Dark Matter Physics

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