

Abstract Submitted
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The LUX Apparatus LOUIS KASTENS, Yale University, LUX COLLABORATION — The LUX experiment will search for Weakly Interacting Massive Particles (WIMPs) using a liquid Xenon time projection chamber. Simultaneous measurement of ionization and scintillation allows for 3D position reconstruction, with a nuclear recoil energy threshold as low as 4.5keV. The ratio of ionization and scintillation allows event by event discrimination between nuclear and electronic recoils, and self-shielding provides additional gamma ray background reduction. A water shield will protect the detector from gamma rays and neutrons from the surrounding rock. With 300 kg of LXe, LUX is expected to improve sensitivity to WIMPs by a factor of 100. LUX plans to deploy to the Sanford Laboratory at the Homestake mine in late 2008 to begin taking data. I describe the construction and strategy behind the LUX detector.

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