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Status of the Large Underground Xenon (LUX) Detector NICOLE LARSEN, Yale University, LUX COLLABORATION — The LUX (Large Underground Xenon) experiment is a 350-kg xenon-based direct dark matter detection experiment consisting of a two-phase (liquid/gas) xenon time projection chamber with a 100-kg fiducial mass. This technology has many advantages, including scalability, self-shielding, the absence of any long-lived isotopes, high gamma ray stopping power, and the ability to precisely measure the charge-to-light ratio of interactions within the detector, which provides an accurate method for discriminating between electron recoils (gamma rays, beta decays) and nuclear recoils (neutrons, WIMPS) within the detector. LUX's projected sensitivity for 300 days of acquisition is a cross-section of 7×10^{-46} cm^2 for a WIMP mass of 100 GeV, representing an increase of nearly an order of magnitude over previous WIMP cross-section limits. From November 2011 through February 2012, LUX was deployed in a surface laboratory at the Homestake Mine in South Dakota for its second surface run. This talk will provide an overview of the LUX design and a report on the status of the experiment after the surface run and before underground deployment.

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