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The LUX Dark Matter experiment

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The LUX (Large Underground Xenon) experiment aims at the direct detection of dark matter particles via their collisions with xenon nuclei. The 350 kg two-phase liquid xenon time projection chamber measures simultaneously the scintillation and ionization from interactions in the target. The ratio of these two signals provides very good discrimination between potential nuclear recoil signals and electronic recoils to set limits on WIMP-nucleus scattering cross sections. The detector has been operating since early 2013 at the Sanford Underground Research Facility (SURF) in South Dakota at 4850ft underground. An overview of the detector, including the xenon handling and water tank systems will be presented, along with an update on the status of the experiment and upcoming first results.

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