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The LUX-Zeplin Dark Matter Search: detector design and sensitivity

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The nature and origin of Dark Matter are among the most compelling mysteries of contemporary science. For over three decades, physicists have been trying to detect Dark Matter particles via collisions on target nuclei, with little success.

The LZ collaboration is designing a massive Dark Matter detector, to be installed at the 4850 level of the Sanford Underground Research Facility in Lead, South Dakota. This detector will feature 7 active tons of target nuclei and use the established liquid xenon TPC technology to achieve unprecedented sensitivity to a wide range of Dark Matter candidates.

In this talk, I will discuss the design and sensitivity of the experiment, together with its status.

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