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Detecting Dark Matter at the LUX-ZEPLIN Experiment

How much do we really know about our universe? A growing body of cosmological evidence tells us "not much": around 16% to be precise. That is the amount of matter that the Standard Model of particle physics is able to explain. So what is the rest of the mass of the universe made up of? For now at least, we've only got a name for it: Dark Matter.

LUX-ZEPLIN is one experiment trying to answer this question, by looking for direct interactions between Dark Matter coming from space and the detector material. Using 7 tons of liquid xenon and located one mile underground at the Sanford Underground Research Facility in South Dakota, USA, LUX-ZEPLIN will be the world's largest and most sensitive experiment when it switches on next year. In this seminar, I will summarize the state of the field, give an overview of the LUX-ZEPLIN experiment and our construction progress, and describe our sensitivity to various models.

Date: Monday 11 November
Time: 3pm
Venue: L1, Seminar Room 107, 10 College Walk, Clayton

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