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Dark Matter Search with the XENON100 Experiment

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The XENON100 experiment is the second step in the XENON dark matter search project. Consisting of a liquid xenon detector with a total mass of 161 kg and a sensitive mass of 62 kg, the detector uses the double-phase TPC technology to record the energy and position of particle interactions. Multiple strategies for background reduction have turned XENON100 into the most sensitive dark matter search experiment at present. After the initial release of 11 live-days of data taken during a commissioning run which set one of the most stringent limits for WIMPs, a new dataset of ~100 live-days of blind dark matter data has been recently analyzed. In this talk we describe the analysis of these data and the results obtained, together with the efforts by the different groups in the collaboration to reduce the uncertainties in the energy calibration of the detector. Finally, prospects for the next runs of the detector and the next step in the XENON project, XENON1T, are presented

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