

Abstract Submitted
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First Results from the XENON10 Dark Matter Experiment the Gran Sasso Underground Lab ELENA APRILE, Columbia University, XENON COLLABORATION — We report the first results from a search for Weakly Interacting Massive Particles (WIMPs) with the XENON10 experiment operating underground at the Gran Sasso Laboratory. XENON10 is the first dual phase xenon time projection chamber (XeTPC) module realized within the XENON program. The 3D-position sensitive detector has an active mass of 15 kg of liquid xenon, viewed by two arrays of compact photomultipliers, to measure simultaneously the scintillation and the ionization, via proportional scintillation in the gas. Background rejection on an event-by-event basis is achieved through this measurement and 3D event localization. The detector was deployed underground in Spring 2006 and mounted in its shield in Summer 2006. The experiment has been operating continuously for the past five months, with a high degree of stability and very good performance. The energy threshold is <10 keV and the background rate is <1 evt/kg/keV/day. In-situ gamma and neutron calibrations have been carried out to define event selection and energy threshold for nuclear recoil candidates. Data taking continues as of this writing. A blind analysis on the latest months of data is currently being performed using only calibration data. WIMP search results are expected by early Spring 2007.

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