

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

The XENON Dark Matter Experiment: Status of the XENON10 Phase. MARIA ELENA MONZANI, Columbia University, XENON COLLABORATION — The XENON experiment searches for Weakly Interacting Massive Particles (WIMPs) with liquid xenon (LXe) as the active target. The detector is a 3-D position sensitive Time Projection Chamber optimized to simultaneously measure the ionization and scintillation produced by a recoil event down to energies of 16 keV. The distinct ratio of the two signals for nuclear recoils arising from WIMPs and neutrons and for electron recoils from the dominant gamma-ray background determines its event-by-event discrimination. With 1 ton of LXe distributed in ten identical modules, the proposed XENON1T will achieve a sensitivity more than a factor of thousand beyond current limits. A phased program will test the 10 kg target (XENON10) followed by a 100 kg (XENON100) module. The XENON10 detector was assembled and preliminarily tested at Columbia in January 2006. It was shipped to the Gran Sasso National Laboratory in March and then installed in the underground lab. Testing and calibration runs have been performed through June, while the shielding was constructed: the detector was moved in its final location in the shielded environment in July. The first XENON10 physics run will begin in summer 2006. I present the status of this experiment, along with its expected performance and sensitivity.

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Date submitted: 05 Jul 2006

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