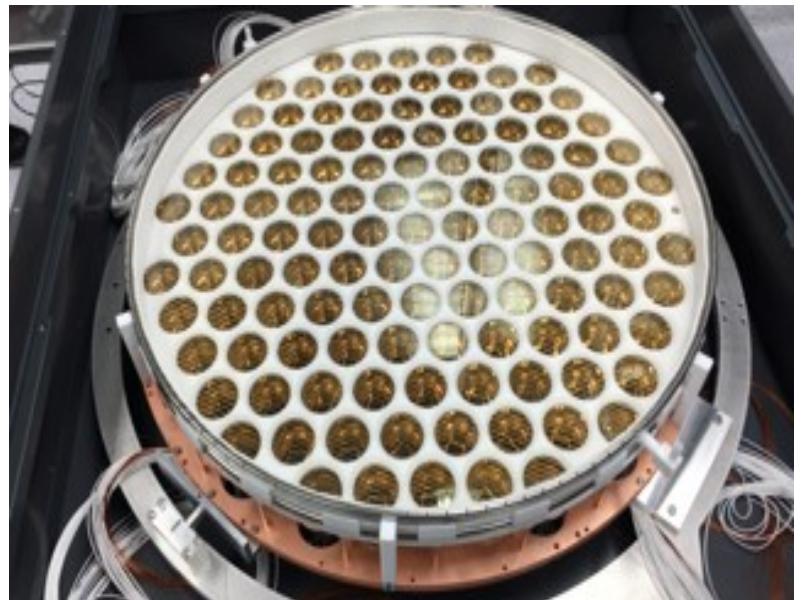




First Results from XENON1T.

Tuesday, 24 October 2017, 16:45 h
DESY Auditorium

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Astronomical and cosmological measurement constitute a strong evidence for the existence of dark matter. Commonly, it is assumed that this new form of non-luminous matter is made out of elementary particles. A measurement of WIMPs (Weakly Interacting Massive Particles) scattering off target nuclei would provide very valuable information on the dark-matter particle mass and its interaction probability with matter. Among the direct dark-matter search detectors, the liquid xenon time-projection chambers (TPCs) have shown best sensitivities for direct detection of WIMP masses above few GeV/c^2 . Recently the XENON1T detector has started operation at the Gran Sasso Underground Laboratory in Italy. Its goal is to measure the properties of dark matter or improve the sensitivity of its precursor XENON100 by two orders of magnitude. XENON1T is a liquid xenon TPC with a total mass of ~ 3.2 tons. To achieve its sensitivity goal, all background contributions have been reduced significantly compared to previous existing experiments. After an introduction, this talk will present the XENON1T detector and the results from the first science run.

- **Coffee, tea and cookies will be served at 16:30h**
- **After the colloquium there is a chance for private discussions with the speaker over wine and pretzels**