

# Séminaire

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## Search for Dark matter with XENON1T Experiment

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*Astronomical and cosmological observations strongly suggest the presence of dark matter. The direct search for evidence of Weakly Interacting Massive Particle (WIMP) dark matter continues to be one of the forefront activities in experimental particle physics. In this talk I will give an overview of the evidences of dark matter and present in particular XENON1T experiment which has achieved world-leading sensitivities in WIMP-nucleon interactions using liquid xenon time projection chambers (TPCs), first with the XENON10 and later with the XENON100 experiments. The actual phase of the experiment consists of an unprecedented one ton fiducial (three tons total) volume of ultra pure liquid xenon as both target and detection medium. The data-taking will start soon and should reach sensitivities down to  $10^{-47} \text{ cm}^2$  after two ton-years of exposure. I will present the upgrade to the ton scale, which was only possible due to a massive research and development program encompassing every aspect of the detector. The current and future stages of the XENON experiment in the context of the global dark matter search will also be discussed..*

Jeudi, 3 novembre, 2016, à 15:30  
Pavillon Claire-McNicoll, Z-210  
Café-biscuits à 15:15 au V-221

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