



ID de Contribution: 255

Type: **Poster**

## Future of Xenon dual-phase time projection chamber detectors

Highlighted by several astrophysical and cosmological observations over the last century, evidences of the existence of dark matter in our Universe are numerous. A number of proposed candidates have been put forward over time: one of the most compelling are Weakly Interacting Massive Particles (WIMPs). The detection of this massive, non-luminous and weakly interactive particle is one of the most challenging research undergoing. Several detectors based on the Xenon dual-phase Time Projection Chamber (TPC) principle have been developed in the quest of catching the elastic scattering of WIMPs with Xenon target nuclei. Most recent results demonstrate that this technology is one of the most competitive to search for rare interactions.

Following the impressive evolution of these type of detectors in the past decades, in my poster I will summarize the most recent results from the XENON Collaboration and the expected physics reach of DARWIN: the new generation ultimate xenon dual-phase time projection chamber conceived to push the sensitivity of direct WIMP searches far beyond existing limits and to explore a large number of other rare processes.

### Choix de session parallèle

3.1 Quel avenir pour la physique des particules?

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**Classification de Session:** Séance Poster