

Seminario, 29/04 16.00

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<https://us02web.zoom.us/j/89089473192>

A family of successful detectors: liquid Xe Time Projection Chambers

Abstract:

The XENON collaboration has operated so far a family of Time Projection Chambers with liquefied Xe of increasing mass and so the sensitivity. The project went from running a small mass detector to prove the detection principle to the most sensitive detector in the field of Dark Matter search in the region of WIMP-nucleon spin-independent elastic scatter cross-section for WIMP masses above 6 GeV/c<sup>2</sup>, with a minimum of  $4.1 \times 10^{-47}$  cm<sup>2</sup> at 30 GeV/c<sup>2</sup> and 90% confidence level.

The extremely good performance shown by the XENON1T detector allowed to search for possible new physics in different channels such as solar axions, an enhanced neutrino magnetic moment, and bosonic dark matter.

The topics mentioned above will be treated in details.