

Direct-detection of dark matter with XENON

Ludwig Rauch

MPI für Kernphysik, Heidelberg

Weakly interacting massive particles (WIMPs) are a very promising explanation for the nature of dark matter.

The XENON100 experiment aims to detect WIMP-nucleon interactions using a dual phase time projection chamber (TPC) with a total liquid xenon target of 161 kg. This talk will focus on the final analysis of XENON100 where the three major science campaigns are combined into a final result featuring the in total 477 live days. Various improvements to the analysis will be highlighted, which allow us to produce the most robust and strongest result of XENON100 for spin independent, spin dependent WIMP-nucleon interactions and in a parameter space independent of astrophysical assumptions. This result will be soon improved by the next generation XENON1T experiment with a target mass of 3500 kg. First commissioning data after one year of operation is shown with a special focus on the performance of the light sensors.