



ID de Contribution: 165

Type: **Ordinary**

Search for low mass WIMPs with CRESST

vendredi 18 mars 2016 09:35 (15 minutes)

In recent years growing interest in low mass dark matter particles can be noted. Cryogenic experiments like CRESST are well suited to search for low mass WIMPs with masses in the GeV and sub GeV region. CRESST is based on the phonon/light technique and uses scintillating CaWO_4 crystals as target material. CRESST-II, which stopped data taking in July 2015, allowed an accurate measurement of recoil energies down to 300 eV using a 300 g CaWO_4 crystal. The upcoming phase CRESST-III is designed to measure energies well below 100 eV, mostly by using about 12 times smaller target crystals with optimized phonon sensors. Given the low energy threshold in combination with light target nuclei, low mass dark matter particles can be probed with high sensitivity. We will present the results obtained with CRESST-II, which extend the reach of direct dark matter experiments to the sub GeV region and demonstrate that the energy threshold is the key parameter in the search for low mass dark matter particles. In addition we give an outlook on the expected performance of the upcoming data taking of CRESST-III and the future potential for direct dark matter detection with further improved CaWO_4 cryogenic detectors.

Auteur principal: Dr PRÖBST, Franz (Max-Planck-Institut für Physik)

Orateur: Dr PRÖBST, Franz (Max-Planck-Institut für Physik)

Classification de Session: DM & Cosmology

Classification de thématique: Experiment