

Title: Results of the CRESST commissioning run 2007

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Abstract

The CRESST-II direct Dark Matter search is located in the Gran Sasso underground laboratories. CaWO₄ crystals have been used as scintillating targets for WIMP interactions. They are operated as cryogenic calorimeters in combination with a second cryogenic detector used to measure the scintillation light produced in the target crystal. For each particle interaction, the combination of phonon and light signals enables an event by event discrimination which allows distinguishing known particles (alphas, betas, gammas, neutrons) from the expected signal of weakly interacting massive particles (WIMPs).

After a major upgrade of the setup, the experiment has been successfully commissioned and data from the commissioning phase are presented here. Combining the data collected with the two detector modules running in this phase with the data from one single module obtained during the previous prototyping run, the experiment could already place a limit of 5.3×10^{-7} pb for the spin independent scattering cross section for WIMPs of 60 GeV/c² mass.