

EXCESS backgrounds observed in low-threshold dark matter and CEvNS experiments

Thursday 27 March 2025 09:15 (15 minutes)

In the last years, rare event searches hunting light dark matter particles or neutrinos via coherent elastic neutrino-nucleus scattering (CEvNS) have pushed their thresholds down to eV-scales. However, with the lower thresholds, the experiments started to measure events above their expected background level. These low-energy EXCESSES typically steeply rise towards low energies and substantially constrain the experiments' sensitivity.

The EXCESS workshop series brings together the experiments and theorists to share data, knowledge, and ideas on the EXCESS to identify its origin and develop mitigation strategies. This contribution summarizes the current state of EXCESS based on a review article currently prepared by the authors.

Authors: VON KROSIGK, Belina (Heidelberg University (DE)); BAXTER, Daniel (Fermi National Accelerator Laboratory, USA); WAGNER, Felix (HEPHY Vienna); REINDL, Florian (Vienna University of Technology (AT)); KAZNACHEEVA, Margarita (Technical University of Munich); ROMANI, Roger (University of California, Berkeley); Prof. ESSIG, Rouven (Stony Brook University); HOCHBERG, Yonit (Hebrew University)

Presenter: REINDL, Florian (Vienna University of Technology (AT))

Session Classification: SESSION 15: Direct detection: Technical Development-2 & Scientific Development