



Contribution ID: 282

Type: **Poster presentation**

## Neutron simulation studies and their implications for CRESST

*Tuesday 19 July 2022 19:00 (1 hour)*

The CRESST-III experiment specialises on the direct search for low-mass dark matter. The analysis of the CaWO<sub>4</sub> detector called “detector A”, operated in Run34, provided world-leading limits in the sub- GeV mass range. To interpret the residually observed events, the existence of a background model is crucial. Neutron-induced nuclear recoils are similar to the sought-for DM-induced nuclear recoil signal and as such, they are an important ingredient to this model.

In this contribution, we present the simulation based neutron background model for the CRESST-III experiment, in the context of the published detector A results, and discuss the probability of obtaining a nuclear recoil contribution to the residual events.

Furthermore, a simulation of the neutron calibration revealed interesting features in the energy deposition spectrum due to thermal neutron capture reactions. A discussion of these features and their potential purpose in future experimental runs is additionally discussed in this poster.

**Author:** FUSS, Alexander**Presenter:** FUSS, Alexander**Session Classification:** Poster session