Contribution ID: **457** Type: **not specified**

A Global Fit of Non-Relativistic Effective Dark Matter Operators Including Solar Neutrinos

Monday 13 May 2024 14:45 (15 minutes)

We perform a global fit of dark matter interactions with nucleons using a non-relativistic effective operator description, considering both direct detection and neutrino data. We examine the impact of combining the direct detection experiments CDMSlite, CRESST-II, CRESST-III, DarkSide-50, LUX, LZ, PandaX-II, PandaX-4T, PICO-60, SIMPLE, SuperCDMS, XENON100, and XENON1T along with neutrino data from IceCube and Deepcore, ANTARES, and Super-Kamiokande. While current neutrino telescope data lead to increased sensitivity compared to underground nuclear scattering experiments for dark matter masses above 100 GeV, our future projections show that the next generation of underground experiments will significantly outpace solar searches for most dark matter-nucleon elastic scattering interactions.

Mini Symposia (Invited Talks Only)

Authors: AVIS KOZAR, Neal; VINCENT, Aaron (Queen's University); SCOTT, Pat (Quantum Brilliance)

Presenter: AVIS KOZAR, Neal

Session Classification: Dark Matter

Track Classification: Dark Matter