

Harmonizing muon flux modelling for SNOLAB

The accurate modelling of underground muon fluxes is critical for the success of underground experiments in particle astrophysics, providing essential background understanding for rare event searches such as neutrinoless double beta decay and dark matter interactions. This proposal seeks to unify the muon flux modelling efforts across various experiments hosted at SNOLAB, leveraging the rich data legacy of the SNO and subsequent experiments.

We recognize ongoing efforts in the Canadian community addressing this issue (e.g., the MUTE software) and would like to provide a platform for discussion on how to best integrate these efforts into modern Monte Carlo software suites (Geant4, FLUKA) more seamlessly, reducing the activation barrier to those who would like to propose searches at SNOLAB without having to rebuild the same muon flux model in standardized software packages.

Primary author: AL KHARUSI, Soud (Stanford University)

Presenter: AL KHARUSI, Soud (Stanford University)