

Phenomenology 2023 Symposium



Contribution ID: 191

Type: not specified

IceCube at the frontier of macroscopic dark matter direct detection

Monday 8 May 2023 15:00 (15 minutes)

For a class of macroscopic dark matter models, inelastic scattering of dark matter off a nucleus can generate electromagnetic signatures with GeV-scale energy. The IceCube detector, with its kilometer-scale size, is ideal for directly detecting such inelastic scattering. Based on the slow particle trigger for the DeepCore detector, we perform a detailed signal and background simulation to estimate the discovery potential. For order 1 GeV deposited energy in each interaction, we find that IceCube can probe the dark matter masses up to one gram.

Primary authors: KORWAR, Mrunal; BAI, Yang; BERGER, Joshua (Colorado State University)

Presenter: KORWAR, Mrunal

Session Classification: BSM III

Track Classification: BSM