Contribution ID: **53** Type: **not specified**

Investigating Track Formation and Morphology in Paleo-Detectors: Research Updates from the University of Michigan

Friday, April 17, 2026 9:20 AM (40 minutes)

The use of ancient minerals as paleo-detectors is an emerging experimental technique capable of transforming the fields of neutrino and dark matter detection. Towards developing a successful mineral detector, we can utilize tools like simulation and track measurement algorithms to help understand the complex dynamics of defect formation in a variety of minerals. Progress on the use of these tools for mineral selection and sensitivity projection at the University of Michigan will be presented. Ongoing research includes molecular dynamics for low-energy (<100 keV) recoil simulation, cosmogenic background modeling with PROPOSAL and Geant4, and automatic track measurement to study the morphology of track formation in a variety of energy (O(100) keV - O(10) MeV) regimes.

Do you plan to give the talk in person?

Yes

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