

Composite dark matter disassembly in the Earth

Wednesday 9 July 2025 12:00 (20 minutes)

Composite dark matter models, where dark matter exists in bound states formed in the early universe, have long been a source of scientific interest. In this talk, I will focus on loosely bound dark matter composite states, where the binding energy per constituent is small compared to the constituent's bare mass. If this binding energy is sufficiently small, scattering with Standard Model nuclei will disassemble composites as they pass through the Earth. I will present results from modelling composite disassembly in the Earth prior to their arrival in direct detection experiments, and begin exploring the expected detection signatures from these disassembled composites.

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Session Classification: Parallel 3