Contribution ID: **161** Type: **5 minutes talk**

Energy transport by dark matter scattering in the Sun

Thursday, 16 December 2021 14:36 (7 minutes)

Asymmetric dark matter (ADM) that is captured in the Sun can act as an efficient conductor of heat, causing observable modifications to properties of the Solar interior. The two formalisms commonly used to parametrise this phenomenon were developed over 30 years ago, and calibrated on single set of simulations. In this talk, I will present the results of new state-of-the-art Monte Carlo simulations of ADM mediated energy transport, including the first ever numerical exploration of interaction cross sections with velocity and momentum dependence. Based on simulation results, updated recommendations on the parametrisation of DM heat transport for inclusion in stellar evolution models will be given.

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Astroparticle

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Session Classification: Gong show talks