

Seminario, Quinta 26/05/2022 10:00h

<https://us02web.zoom.us/j/89870885886>

Nicole Bell University of Melbourne

Title: "Searching for Dark Matter Scattering, on Earth and in the Stars"

The quest to identify the cosmological dark matter is one of the foremost goals of science today. Yet the very nature of dark matter makes this a formidable task. I outline the status of dark matter direct detection searches, and describe new strategies to probe dark matter scattering using existing detectors, such as the Migdal effect, with particular application to light or inelastic dark matter.

Complementary information about dark matter scattering can be obtained by considering the capture of dark matter in stars. For a wide range of parameters, collisions between ambient dark matter and the constituents of a star would result in sufficient energy loss for the dark matter to become gravitationally bound to the star, with important observational consequences. I describe applications of dark matter capture in the Sun, white dwarfs, and neutron stars.