

# Neutrinos and the Quest for New Frontiers

*Tuesday 29 October 2024 15:20 (45 minutes)*

While successful in explaining various natural phenomena, the Standard Model (SM) of particle physics cannot tackle crucial fundamental challenges including non-zero neutrino mass, viable dark matter candidates, and the nature of neutrinos and their novel interactions. In this talk, starting with a brief overview, we will first discuss the current status and unknowns of various neutrino oscillation parameters. A framework based on the “scoto-seesaw” mass mechanism will be discussed to explain neutrino data along with dark matter. We will then focus on neutrino non-standard interactions (NSIs) and their impact on CE\nuNS experiments. Later, this presentation will delve into the capability of the JUNO detector to detect 5.5 MeV solar-axion.

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