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# Microscopic approaches to neutrino-nucleus interactions

*Wednesday, 23 September 2020 11:20 (10 minutes)*

In this talk I will summarize our recent Snowmass LOI on "Microscopic approaches to neutrino-nucleus interactions". The advent of high precision measurements of neutrinos and their oscillations calls for precise theoretical calculations of neutrino scattering cross sections on target nuclei utilized in the detectors. Over the past decade, ab initio methods based on realistic nuclear interactions and current operators have been able to provide accurate description of lepton-nucleus scattering processes. Achieving a comprehensive description of the different reaction mechanisms active in the broad range of energies relevant for oscillation experiments requires the introduction of controlled approximations of the nuclear many-body models. I will give a short overview of recent developments in the description of electroweak interactions within different approaches, and discuss the future perspectives to support the experimental effort in this new precision era.

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