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NuWro

Tuesday, 17 September 2024 14:33 (24 minutes)

NuWro, a state-of-the-art Monte Carlo generator developed by theorists at the University of Wroclaw, simulates neutrino-nucleus interactions. This talk will demonstrate NuWro's capabilities, methodologies, and applications in simulating neutrino-nucleus interactions across a wide energy range, from a few hundred MeV to hundreds of GeV.
In my talk, I will discuss various interaction models that NuWro employs within the impulse approximation(IA), such as quasi-elastic scattering (QEl), meson exchange currents (MEC), resonant pion production (RES), deep inelastic scattering (DIS), and coherent pion production (COH). I will also put special emphasis on the spectral function formalism and nuclear effects simulations like Pauli blocking, fermi motion, and formation zone developed within NuWro. Additionally, I will cover the intra-nuclear cascade model (INC) used for simulating final state interactions within NuWro. Lastly, I will highlight recent developments in NuWro like the development of the single pion production model, the spectral function of Argon, new exclusive hadronic models for MEC, and the incorporation of AI features in NuWro.

Working Group

WG 2: Neutrino Scattering Physics

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