

Neutrino Scattering at Low and Intermediate Energies



Monday, 26 June 2023 - Friday, 30 June 2023

Mainz Institute for Theoretical Physics, Johannes Gutenberg University

Scientific Programme

Presentations and discussions will address the following topics:

Coherent elastic neutrino-nucleus scattering (CEvNS)

Experimental status and outlook

Theoretical calculations (with uncertainty estimation) for relevant nuclear targets

Prospects for exotic physics searches with CEvNS, including the required precision

Inelastic neutrino-nucleus reactions at tens-of-MeV

State of experimental and theoretical approaches

Applications to supernova neutrino detection, etc.

Prospects for related electron beam measurements at the MESA accelerator

Intermediate-energy neutrino scattering for oscillation experiments

Nucleon knockout measurements, theory, and simulations

The role of ab initio calculations in guiding more approximate models

Possible electron-nucleus cross-section measurements using the MAMI beam: kinematical setups, observables, and targets

During the workshop we will be exploring how the unique facilities in Mainz may best be able to benefit the worldwide neutrino physics program.