

# Quasielastic Lepton-Nucleus Scattering and the Correlated Fermi Gas Model

*Thursday 18 July 2024 16:00 (15 minutes)*

The neutrino research program in the coming decades will require improved precision. A major source of uncertainty is the interaction of neutrinos with nuclei that serve as a target of many such experiments. Broadly speaking, this interaction often depends, e.g., for Charge-Current Quasi-Elastic (CCQE) scattering, on the combination of “nucleon physics” expressed by form factors and “nuclear physics” expressed by a nuclear model. It is important to get a good handle on both.

This talk presents a fully analytic implementation of the Correlated Fermi Gas (CFG) Model for CCQE electron-nuclei and neutrino-nuclei scattering. The implementation is used to compare separately form factors and nuclear model effects for both electron-carbon and neutrino-carbon scattering data.

## Alternate track

1. Strong Interactions and Hadron Physics

## I read the instructions above

Yes

**Author:** Prof. PAZ, Gil (Wayne State University)

**Presenter:** Prof. PAZ, Gil (Wayne State University)

**Session Classification:** Neutrino Physics

**Track Classification:** 02. Neutrino Physics