Contribution ID: **58** Type: **Contributed**

Electroweak structure of the nucleon

Wednesday, 7 June 2023 14:50 (20 minutes)

Nucleon electroweak form factors contain relevant details about hadronic structure and strong interactions in the nonperturbative regime. This information is encoded in their dependence on the momentum transferred to the nucleon by external probes but also in their quark-mass dependence, which is accessible by Lattice QCD (LQCD) simulations.

In our study we rely on relativistic chiral perturbation theory (ChPT) in two flavors with explicit Delta(1232) degrees of freedom. For the electromagnetic isovector form factors we also employ dispersion theory to account for rho-dominated isovector pion-pion interaction and its quark-mass dependence in the t-channel nonperturbatively and beyond NLO in ChPT. With this framework we explore how LQCD data are described in both the Q2 and mpi dimensions simultaneously. Furthermore, we have performed an NNLO calculation of the nucleon axial form factor, extracting relevant low-energy constants from a combined set of recent LQCD results from different collaborations.

Primary authors: ALVARADO, Fernando (IFIC); ALVAREZ-RUSO, Luis

Presenter: ALVARADO, Fernando (IFIC)

Session Classification: QCD and hadron structure

Track Classification: QCD and hadron structure