

# **Marciana 2023- Lepton Interactions with Nucleons and Nuclei**



*Marciana Marina, Isola d'Elba, Italy*

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# The JLab of the Future: New Opportunities in Hadronic Physics

*Monday, 4 September 2023 09:00 (45 minutes)*

**Presenter:** ROSSI, Patrizia (Jefferson Lab)

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 2

Type: **not specified**

## SuperFast Quarks

**Presenter:** ARRINGTON, John (Argonne National Laboratory)

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 3

Type: **not specified**

## **Nucleon Form Factors**

*Monday, 4 September 2023 09:45 (30 minutes)*

**Presenter:** CATES, Gordon (UVA)

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 4

Type: **not specified**

## **Hadrons in nuclei and the experimentalist's roadmap to QCD**

*Monday, 4 September 2023 10:15 (30 minutes)*

**Presenter:** SZUMILA-VANCE, Holly (Jefferson Lab)

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 5

Type: **not specified**

## **3D partonic hadron structure from experimental measurement and lattice QCD calculations**

*Monday, 4 September 2023 12:00 (30 minutes)*

**Presenter:** AVAKIAN, Harut

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 6

Type: **not specified**

## **A brief history of the "basic model" of nuclei**

*Monday, 4 September 2023 11:15 (45 minutes)*

**Presenter:** SCHIAVILLA, Rocco (Jefferson Lab/Old Dominion University)

**Session Classification:** Hadron structure and spectroscopy

Contribution ID: 7

Type: **not specified**

## **Dark Sector searches at Jefferson Lab**

*Monday, 4 September 2023 17:00 (30 minutes)*

**Presenter:** BATTAGLIERI, Marco (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Dark Photons and Dark Matter



Contribution ID: 8

Type: **not specified**

## **Muon Charged Lepton Flavour Violation searches overview and X17 search with the MEGII apparatus**

*Thursday, 7 September 2023 16:30 (30 minutes)*

**Presenter:** PAPA, Angela (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Neutrino Interactions/ Low Energy

Contribution ID: 9

Type: **not specified**

## **Study of dark matter scattering off 2 H and 4 He nuclei within Chiral effective field theory**

*Monday, 4 September 2023 17:30 (30 minutes)*

**Presenter:** FILANDRI, Elena (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Dark Photons and Dark Matter

Contribution ID: **10**

Type: **not specified**

## **The Search for Dark Matter in Liquid Argon with Darkside-20k**

*Monday, 4 September 2023 18:00 (30 minutes)*

**Presenter:** JAMIL, Ako (Princeton University)

**Session Classification:** Dark Photons and Dark Matter

Contribution ID: 11

Type: **not specified**

## **12C(alpha,gamma): an evaluator's perspective**

*Tuesday, 5 September 2023 09:00 (30 minutes)*

**Presenter:** DEBOER II, Richard James

**Session Classification:** 12C(alpha, gamma)

Contribution ID: 12

Type: **not specified**

## **The ERNA experiment: recent achievements and perspectives**

*Tuesday, 5 September 2023 09:30 (30 minutes)*

**Presenter:** BUOMPANE, Raffaele (Università della Campania)

**Session Classification:** 12C(alpha, gamma)

Contribution ID: 13

Type: **not specified**

## Helium-burning reactions and stellar evolution

*Tuesday, 5 September 2023 10:00 (30 minutes)*

**Presenter:** PRADA MORONI, Pier Giorgio (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** 12C(alpha, gamma)

Contribution ID: 14

Type: **not specified**

## **Double-beta decay nuclear matrix elements: the theoretical challenge**

*Tuesday, 5 September 2023 11:00 (30 minutes)*

**Presenter:** ITACO, Nunzio (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Double Beta Decay

Contribution ID: 15

Type: **not specified**

## **Recent and prospective progress of double beta decay experiments**

*Tuesday, 5 September 2023 11:30 (30 minutes)*

**Presenter:** O'DONNELL, Thomas

**Session Classification:** Double Beta Decay



Contribution ID: 16

Type: **not specified**

## Lattice QCD inputs for double beta decay

*Tuesday, 5 September 2023 12:00 (30 minutes)*

**Presenter:** NICHOLSON, Amy (Institute for Nuclear Theory)

**Session Classification:** Double Beta Decay

Contribution ID: 17

Type: **not specified**

## **Title TBC**

**Presenter:** HAYEN, Leendert (IKS, KU Leuven)

**Session Classification:** Beta Decay

Contribution ID: **18**

Type: **not specified**

## **Precision beta decays and implication for new physics**

*Tuesday, 5 September 2023 16:30 (30 minutes)*

**Presenter:** CIRIGLIANO, Vincenzo (Los Alamos National Laboratory)

**Session Classification:** Beta Decay

Contribution ID: 19

Type: **not specified**

## **Nuclear physics for the precise extraction of $V_{ud}$**

*Tuesday, 5 September 2023 17:00 (30 minutes)*

**Presenter:** SENG, Chien Yeah (FRIB and University of Washington)

**Session Classification:** Beta Decay

Contribution ID: 20

Type: **not specified**

## Double Beta Decay

*Tuesday, 5 September 2023 17:30 (30 minutes)*

**Presenter:** MEREGHETTI, emanuele (Los Alamos National Laboratory)

**Session Classification:** Beta Decay

Contribution ID: 21

Type: **not specified**

## **coffee break**

**Session Classification:** Beta Decay

Contribution ID: 22

Type: **not specified**

# Neutrinos, Nuclei, and Quantum Computing

*Wednesday, 6 September 2023 09:00 (1 hour)*

**Presenter:** CARLSON, Joe (LANL)

**Session Classification:** Quantum Monte Carlo/Nuclear theory

Contribution ID: 23

Type: **not specified**

## **Nuclear properties from Quantum Monte Carlo with EFT interactions**

*Wednesday, 6 September 2023 10:00 (30 minutes)*

**Presenter:** GANDOLFI, Stefano (Theoretical Division, Los Alamos National Laboratory)

**Session Classification:** Quantum Monte Carlo/Nuclear theory



Contribution ID: 24

Type: **not specified**

## **Quantum Monte Carlo calculations of electroweak observables with local chiral potentials**

*Wednesday, 6 September 2023 11:00 (30 minutes)*

**Presenter:** KING, Garrett

**Session Classification:** Quantum Monte Carlo/Nuclear theory

Contribution ID: 25

Type: **not specified**

## **Electroweak processes on light nuclei**

*Wednesday, 6 September 2023 11:30 (30 minutes)*

**Presenter:** GNECH, Alex (ECT\*)

**Session Classification:** Quantum Monte Carlo/Nuclear theory

Contribution ID: 26

Type: **not specified**

## **Electron and neutrino scattering off the deuteron: elastic and breakup channels**

*Wednesday, 6 September 2023 12:00 (30 minutes)*

**Presenter:** SKIBINSKI, Roman (Jagiellonian University)

**Session Classification:** Quantum Monte Carlo/Nuclear theory

Contribution ID: 27

Type: **not specified**

## US Snowmass Process and P5

**Presenter:** HUBER, Patrick (Virginia Tech)

**Session Classification:** Neutrino experiments

Contribution ID: 28

Type: **not specified**

## **T2K: Current and future neutrino cross-section measurements**

*Thursday, 7 September 2023 09:00 (30 minutes)*

**Presenter:** SULLIVAN, Liam (Mainz)

**Session Classification:** Neutrino experiments

Contribution ID: 29

Type: **not specified**

## Nova

**Presenter:** YAEGGY, Barbara (University of Cincinnati)

**Session Classification:** Neutrino experiments

Contribution ID: **30**

Type: **not specified**

## **DUNE**

*Thursday, 7 September 2023 09:30 (40 minutes)*

**Presenter:** WORCESTER, Elizabeth (Brookhaven National Laboratory)

**Session Classification:** Neutrino experiments

Contribution ID: **31**

Type: **not specified**

## **MicroBooNE**

*Thursday, 7 September 2023 10:40 (30 minutes)*

**Presenter:** ASHKENAZI, Adi (Tel Aviv University)

**Session Classification:** Neutrino experiments



Contribution ID: 32

Type: **not specified**

## **Elastic and Inelastic Neutrino-Nucleus Interactions at Tens of MeV**

**Presenter:** PANDEY, Vishvas (Fermilab)

**Session Classification:** Neutrino Interactions/ Low Energy

Contribution ID: **33**

Type: **not specified**

## **Title TBC**

**Presenter:** SCHIAVILLA, Rocco (Jefferson Lab/Old Dominion University)

**Session Classification:** Neutrino Interaction Theory

Contribution ID: 34

Type: **not specified**

## **Coupled Cluster formalism for lepton scattering**

*Friday, 8 September 2023 09:30 (30 minutes)*

**Presenter:** SOBCZYK, Joanna (University of Mainz)

**Session Classification:** Neutrino Interaction Theory

Contribution ID: 35

Type: **not specified**

## **Quantum Monte Carlo calculations of lepton-nucleus scattering in the Short-Time Approximation**

*Friday, 8 September 2023 11:00 (30 minutes)*

**Presenter:** ANDREOLI, Lorenzo (Washington University in St Louis)

**Session Classification:** Neutrino Interaction Theory

Contribution ID: 36

Type: **not specified**

## **Lepton-nucleus scattering within Quantum-Monte Carlo based approaches**

*Friday, 8 September 2023 10:00 (30 minutes)*

**Presenter:** ROCCO, Noemi (R)

**Session Classification:** Neutrino Interaction Theory

Contribution ID: 37

Type: **not specified**

## **Electroweak interactions with 16O below 100 MeV**

*Thursday, 7 September 2023 17:00 (30 minutes)*

**Presenter:** SAKUDA, Makoto (Okayama University)

**Session Classification:** Neutrino Interactions/ Low Energy

Contribution ID: 38

Type: **not specified**

## **Interaction of neutrinos with nuclear targets in the shallow and deep inelastic scattering regions**

*Thursday, 7 September 2023 11:10 (45 minutes)*

**Presenter:** ATHAR, Mohammad Sajjad (Department of Physics, Aligarh Muslim University, Aligarh, India)

**Session Classification:** Neutrino experiments

Contribution ID: 39

Type: **not specified**

## **Role of two body current in lepton nucleus cross section**

*Thursday, 7 September 2023 17:30 (30 minutes)*

**Presenter:** BENHAR NOCCIOLI, Omar (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Neutrino Interactions/ Low Energy



Contribution ID: 40

Type: **not specified**

## **Ab initio computations of nuclear structure and response using self-consistent Green's function**

*Friday, 8 September 2023 09:00 (30 minutes)*

**Presenter:** BARBIERI, Carlo (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Neutrino Interaction Theory

Contribution ID: 41

Type: **not specified**

## **Sterile neutrinos and neutrinoless double beta decay**

*Tuesday, 5 September 2023 18:00 (30 minutes)*

**Presenter:** DEKENS, Wouter

**Session Classification:** Beta Decay

Contribution ID: 42

Type: **not specified**

## **Final results from e-Ar experiment at Jefferson Lab**

*Monday, 4 September 2023 16:30 (30 minutes)*

**Presenters:** MARIANI, Camillo (Virginia Tech); BENHAR NOCCIOLI, Omar (Istituto Nazionale di Fisica Nucleare)

**Session Classification:** Dark Photons and Dark Matter

Contribution ID: 43

Type: **not specified**

## Closing remarks

*Friday, 8 September 2023 11:30 (10 minutes)*

**Presenter:** MARIANI, Camillo (Virginia Tech)

**Session Classification:** Neutrino Interaction Theory