

Next generation ab initio nuclear theory

Report of Contributions

Contribution ID: **1**

Type: **not specified**

Workshop registration

Contribution ID: 2

Type: **not specified**

Welcome ECT* Director

Monday 14 July 2025 09:15 (15 minutes)

Presenter: VAN KOLCK, Ubirajara

Contribution ID: 3

Type: **not specified**

Chiral interactions with gradient flow regulator

Monday 14 July 2025 10:05 (35 minutes)

Presenter: KREBS, Hermann

Contribution ID: 4

Type: **not specified**

Regular and irregular EFT convergence patterns: how to find them and what to do about them

Tuesday 15 July 2025 15:40 (35 minutes)

Presenter: PHILLIPS, Daniel

Contribution ID: 5

Type: **not specified**

Experiments to explore three-nucleon forces

Monday 14 July 2025 11:10 (35 minutes)

Presenter: SEKIGUCHI, Kimiko

Contribution ID: 6

Type: **not specified**

Polarization phenomena in 2N and 3N systems

Monday 14 July 2025 11:45 (35 minutes)

Presenter: SKIBIŃSKI, Roman

Contribution ID: 7

Type: **not specified**

Pionless EFT for the next generation

Monday 14 July 2025 14:00 (35 minutes)

Presenter: VAN KOLCK, Ubirajara

Contribution ID: 8

Type: **not specified**

Unitarity Expansion in ChiEFT

Monday 14 July 2025 14:35 (35 minutes)

Presenter: GRIESSHAMMER, Harald

Contribution ID: 9

Type: **not specified**

Mirroring nuclei at the unitary limit

Monday 14 July 2025 15:40 (35 minutes)

Presenter: KIEVSKY, Alejandro

Contribution ID: **10**

Type: **not specified**

Next Generation Ab Initio Nuclear Theory —scope of the workshop

Monday 14 July 2025 09:30 (35 minutes)

Author: Prof. FURNSTAHL, Richard (Ohio State University)

Presenter: Prof. FURNSTAHL, Richard (Ohio State University)

Contribution ID: 11

Type: **not specified**

Extrapolation and emulation techniques for few-body resonances

Tuesday 15 July 2025 09:30 (35 minutes)

Presenter: KOENIG, Sebastian

Contribution ID: 12

Type: **not specified**

Fast & accurate emulators for two- and three-body scattering

Tuesday 15 July 2025 10:05 (35 minutes)

Presenter: DRISCHLER, Christian

Contribution ID: 13

Type: **not specified**

Conformal prediction, neural networks, and emulators for few-body systems

Tuesday 15 July 2025 11:10 (35 minutes)

Presenter: GEZERLIS, Alex

Contribution ID: 14

Type: **not specified**

Neural-network quantum Monte Carlo approaches for ab initio nuclear structure

Tuesday 15 July 2025 11:45 (35 minutes)

Presenter: YANG, Yilong

Contribution ID: 15

Type: **not specified**

A lattice-based neural network quantum state

Tuesday 15 July 2025 14:00 (15 minutes)

Presenter: BARBIERI, Carlo

Contribution ID: **16**

Type: **not specified**

Physics Informed Neural Networks for the quantum many-body problem

Tuesday 15 July 2025 14:15 (35 minutes)

Presenter: BREVI, Lorenzo

Contribution ID: 17

Type: **not specified**

Extending the reach of ab initio approaches using tensor factorization

Wednesday 16 July 2025 15:40 (35 minutes)

Presenter: ZUREK, Lars

Contribution ID: **18**

Type: **not specified**

Quantum formulas for rotational energies for ab initio calculations

Tuesday 15 July 2025 16:15 (35 minutes)

Presenter: OTSUKA, Taka

Contribution ID: **19**

Type: **not specified**

Nuclear forces and ab initio calculations of medium-mass to heavy nuclei

Wednesday 16 July 2025 09:30 (35 minutes)

Presenter: SCHWENK, Achim

Contribution ID: 20

Type: **not specified**

In-Medium SRG for deformed nuclei and other new developments

Wednesday 16 July 2025 10:05 (35 minutes)

Presenter: HERGERT, Heiko

Contribution ID: 21

Type: **not specified**

Toward diagrammatic Monte Carlo for nuclei (TBC)

Wednesday 16 July 2025 11:10 (35 minutes)

Presenter: BROLLI, Stefano

Contribution ID: 22

Type: **not specified**

Capturing many-body correlations at polynomial cost

Thursday 17 July 2025 11:45 (35 minutes)

Presenter: SCALES, Alberto

Contribution ID: 23

Type: **not specified**

Probing nuclear electroweak properties with atoms and molecules

Wednesday 16 July 2025 14:00 (35 minutes)

Presenter: GARCIA RUIZ, Ronald

Contribution ID: 24

Type: **not specified**

Novel chiral low-resolution interactions

Wednesday 16 July 2025 14:35 (35 minutes)

Presenter: ARTHUIS, Pierre

Contribution ID: 26

Type: **not specified**

Impact of ground-state correlations on the nuclear response

Wednesday 16 July 2025 16:15 (35 minutes)

Presenter: PORRO, Andrea

Contribution ID: 27

Type: **not specified**

Electrons for Neutrinos at MAMI and MESA

Thursday 17 July 2025 09:30 (35 minutes)

Presenter: DORIA, Luca

Contribution ID: 28

Type: **not specified**

Towards neutrino-nucleus scattering with coupled-cluster theory

Thursday 17 July 2025 10:05 (35 minutes)

Presenter: BACCA, Sonia

Contribution ID: 29

Type: **not specified**

Evidence for multimodal superfluidity in neutrons and other emergent phenomena

Thursday 17 July 2025 11:10 (35 minutes)

Presenter: LEE, Dean

Contribution ID: 30

Type: **not specified**

Many-body theory for nuclear response functions and nuclear matter

Wednesday 16 July 2025 11:45 (35 minutes)

Presenter: MARINO, Francesco

Contribution ID: **31**

Type: **not specified**

Low-Energy Electron Scattering for Exotic Nuclei and Nucleons

Thursday 17 July 2025 14:00 (35 minutes)

Presenter: SUDA, Toshimi

Contribution ID: 32

Type: **not specified**

Quantum Monte Carlo calculations for next-generation electroweak physics experiments

Thursday 17 July 2025 14:35 (35 minutes)

Presenter: KING, Garrett

Contribution ID: 33

Type: **not specified**

Quantum Monte Carlo formalism for dynamical pions and nucleons

Thursday 17 July 2025 15:40 (35 minutes)

Presenter: MADEIRA, Lucas

Contribution ID: 34

Type: **not specified**

Spin-isospin symmetries of nuclear beta decays

Thursday 17 July 2025 16:15 (35 minutes)

Presenter: LI MULI, Simone

Contribution ID: 35

Type: **not specified**

Ab initio calculations of beta-decay half-lives for N=50 neutron-rich nuclei

Friday 18 July 2025 09:30 (35 minutes)

Presenter: LI, Zhen

Contribution ID: 36

Type: **not specified**

Electroweak Radiative Corrections and Beyond from Ab Initio Theory

Friday 18 July 2025 10:05 (35 minutes)

Presenter: GENNARI, Michael

Contribution ID: 37

Type: **not specified**

Electro-scattering on light nuclei and beyond

Friday 18 July 2025 11:10 (35 minutes)

Presenter: GNECH, Alex

Contribution ID: 38

Type: **not specified**

Ab Initio Reactions up to Medium-mass Nuclei with the Symmetry-adapted Resonating Group Method

Friday 18 July 2025 11:45 (35 minutes)

Presenter: LINARES FERNANDEZ, Jose Pablo

Contribution ID: 39

Type: **not specified**

First principles structures from hadrons to nuclei - layers of effectiveness

Monday 14 July 2025 16:15 (35 minutes)

Presenter: VARY, James (Iowa State University)