

**International Conference on  
Nuclear Theory in the  
Supercomputing Era –2024  
(NTSE-2024)**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Opening

*Monday, December 2, 2024 9:50 AM (10 minutes)*

**Presenter:** KIM, Youngman (CENS, IBS)

Contribution ID: 2

Type: **not specified**

## **Emerging nuclear landscape and CI calculations on supercomputers**

*Monday, December 2, 2024 10:00 AM (30 minutes)*

**Presenter:** OTSUKA, Takaharu (RIKEN / University of Tokyo)

Contribution ID: 3

Type: **not specified**

## **A weak entanglement approximation for nuclear structure**

*Monday, December 2, 2024 10:30 AM (30 minutes)*

**Presenter:** JOHNSON, Calvin (San Diego State University)

Contribution ID: 4

Type: **not specified**

## **Quasi-particle vacua shell model for medium-heavy nuclei and its applications**

*Monday, December 2, 2024 11:30 AM (30 minutes)*

**Presenter:** SHIMIZU, Noritaka (University of Tsukuba)

Contribution ID: 5

Type: **not specified**

## **Understanding collective dipole excitations near the neutron separation energies in spherical molybdenum isotopes**

*Monday, December 2, 2024 12:00 PM (30 minutes)*

**Presenter:** IN, Eunjin (Lawrence Livermore National Laboratory (LLNL))

Contribution ID: 6

Type: **not specified**

## **Structure of light nuclei using two Schrödinger-like equations**

*Monday, December 2, 2024 2:00 PM (30 minutes)*

**Presenter:** MONDAL, Chandan (Institute of Modern Physics, Chinese Academy of Sciences)

Contribution ID: 7

Type: **not specified**

## **Speculations about isospin analogues of tetraneutron**

*Monday, December 2, 2024 2:30 PM (30 minutes)*

**Presenter:** SHIROKOV, Andrey (Lomonosov Moscow State University)



Contribution ID: 8

Type: **not specified**

## **Coulomb interaction with HORSE formalism**

*Monday, December 2, 2024 3:30 PM (30 minutes)*

**Presenter:** KULIKOV, Vasily (Lomonosov Moscow State University)

Contribution ID: 9

Type: **not specified**

## **Role of the Light Mass Nuclear Reactions in the r-process Nucleosynthesis**

*Monday, December 2, 2024 4:00 PM (30 minutes)*

**Presenter:** Dr KIM, Kyungil (Institute for Rare Isotope Science, Institute for Basic Science)

Contribution ID: **10**

Type: **not specified**

## Discussions

*Monday, December 2, 2024 4:45 PM (1h 15m)*

Contribution ID: 11

Type: **not specified**

## **For memory of Prof. Ruprecht Machleidt**

*Tuesday, December 3, 2024 9:30 AM (30 minutes)*

**Presenter:** SAMMARRUCA, Francesca (University of Idaho)

Contribution ID: 12

Type: **not specified**

## **For memory of Prof. Ruprecht Machleidt**

*Tuesday, December 3, 2024 10:00 AM (15 minutes)*

**Presenter:** EPELBAUM, Evgeny (Ruhr University Bochum)

Contribution ID: 13

Type: **not specified**

## **For memory of Prof. Ruprecht Machleidt**

*Tuesday, December 3, 2024 10:15 AM (15 minutes)*

**Presenter:** NAVRATIL, Petr (TRIUMF)

Contribution ID: 14

Type: **not specified**

## **For memory of Prof. Ruprecht Machleidt**

*Tuesday, December 3, 2024 10:30 AM (15 minutes)*

**Presenter:** VARY, James (Iowa State University)

Contribution ID: 15

Type: **not specified**

## **OPEN MIC: For memory of Prof. Ruprecht Machleidt**

*Tuesday, December 3, 2024 10:45 AM (15 minutes)*



Contribution ID: 16

Type: **not specified**

## Effective shell-model interactions from Daejeon16

*Tuesday, December 3, 2024 11:30 AM (30 minutes)*

**Presenter:** SMIRNOVA, Nadezhda (LP2IB, University of Bordeaux, France)

Contribution ID: 17

Type: **not specified**

## **Nuclear structure input to low-energy precision tests of the Standard Model via superallowed $0^+ \rightarrow 0^+$ Fermi $\beta$ -decay**

*Tuesday, December 3, 2024 12:00 PM (30 minutes)*

**Presenter:** XAYAVONG, Latsamy (Yonsei University)

Contribution ID: **18**

Type: **not specified**

## **Ab initio no-core shell-model study for $Z=5-11$ nuclei**

*Tuesday, December 3, 2024 2:00 PM (30 minutes)*

**Presenter:** SRIVASTAVA, Praveen C. (ndian Institute of Technology-Roorkee, India)

Contribution ID: 19

Type: **not specified**

## **Resonant and bound states in neutron rich nuclei**

*Tuesday, December 3, 2024 2:30 PM (30 minutes)*

**Presenter:** LAZAUSKAS, Rimantas (IPHC, Strasbourg)

Contribution ID: 20

Type: **not specified**

## **Advances in coupled-cluster computations of nuclei**

*Tuesday, December 3, 2024 3:30 PM (30 minutes)*

**Presenter:** HAGEN, Gaute (Oak Ridge National Laboratory)

Contribution ID: 21

Type: **not specified**

## **Low-energy photodisintegration in cluster EFT**

*Tuesday, December 3, 2024 4:00 PM (30 minutes)*

**Presenter:** LEIDEMANN, Winfried (University of Trento)

Contribution ID: 22

Type: **not specified**

## Discussions

*Tuesday, December 3, 2024 4:45 PM (1h 15m)*

Contribution ID: 23

Type: **not specified**

## **Neutron-Rich Systems: Current Status of Ab Initio Predictions vs. Empirical Constraints**

*Wednesday, December 4, 2024 9:30 AM (30 minutes)*

**Presenter:** SAMMARRUCA, Francesca (University of Idaho)



Contribution ID: 24

Type: **not specified**

## **An alternative energy density functional based on the hyperradial density**

*Wednesday, December 4, 2024 10:00 AM (30 minutes)*

**Presenter:** ORLANDINI, Giuseppina (University of Trento)

Contribution ID: 25

Type: **not specified**

## **Chiral EFT for nuclear systems: New developments**

*Wednesday, December 4, 2024 10:30 AM (30 minutes)*

**Presenter:** EPELBAUM, Evgeny (Ruhr University Bochum)

Contribution ID: 26

Type: **not specified**

# Carbon and Oxygen isotopes in Nuclear Lattice Effective Field Theory

*Wednesday, December 4, 2024 11:30 AM (30 minutes)*

**Presenter:** SONG, Young-Ho (RISP, IBS)

Contribution ID: 27

Type: **not specified**

## **Driplines in lattice EFT with Woods- Saxon potential**

*Wednesday, December 4, 2024 12:00 PM (30 minutes)*

**Presenter:** KIM, Myungkuk (CENS/IBS)

Contribution ID: 28

Type: **not specified**

## **Large scale ab initio investigation of electroweak processes in atomic nuclei**

*Wednesday, December 4, 2024 2:00 PM (30 minutes)*

**Presenter:** NAVRATIL, Petr (TRIUMF)

Contribution ID: 29

Type: **not specified**

## **Ab initio calculations of the structure and reactions of light nuclei**

*Wednesday, December 4, 2024 2:30 PM (30 minutes)*

**Presenter:** MARIS, Pieter (Iowa State University)

Contribution ID: **30**

Type: **not specified**

## **Intruder structure and shape mixing from an ab initio perspective**

*Wednesday, December 4, 2024 3:30 PM (30 minutes)*

**Presenter:** CAPRIO, Mark (University of Notre Dame)

Contribution ID: 31

Type: **not specified**

## **Machine learning in the problem of no core shell model result extrapolations**

*Wednesday, December 4, 2024 4:00 PM (30 minutes)*

**Presenter:** MAZUR, Aleksandr (Pacific National University)



Contribution ID: **32**

Type: **not specified**

## Discussions

*Wednesday, December 4, 2024 4:45 PM (1h 15m)*

Contribution ID: 33

Type: **not specified**

## **Accelerating scientific research through multidisciplinary collaboration in computation and machine learning**

*Thursday, December 5, 2024 9:30 AM (30 minutes)*

**Presenter:** NG, Esmond (Lawrence Berkeley National Laboratory)

Contribution ID: 34

Type: **not specified**

## **Lattice QCD and supercomputing for nuclear physics**

*Thursday, December 5, 2024 10:00 AM (30 minutes)*

**Presenter:** PARK, Sungwoo (Lawrence Livermore National Laboratory)

Contribution ID: 35

Type: **not specified**

## Heavy ion collision simulation using DJBUU

*Thursday, December 5, 2024 10:30 AM (30 minutes)*

**Presenter:** LEE, Chang-Hwan (Pusan National University)

Contribution ID: 36

Type: **not specified**

## **Probing the symmetry energy with gravitational waves**

*Thursday, December 5, 2024 11:30 AM (30 minutes)*

**Presenter:** HYUN, Chang Ho (Daegu University)

Contribution ID: 37

Type: **not specified**

## **Possible $3\phi\text{H}$ , $9\phi\text{Be}$ , and $6\phi\phi\text{He}$ hypernuclei with HAL QCD interaction**

*Thursday, December 5, 2024 12:00 PM (30 minutes)*

**Presenter:** KEZERASHVILI, Roman (New York City College of technology, City University of New York)

Contribution ID: **38**

Type: **not specified**

## **Exploring the Realm Beyond Exponential Decay in Open Quantum Systems**

*Thursday, December 5, 2024 2:00 PM (30 minutes)*

**Presenter:** WANG, Simin (Fudan University)

Contribution ID: 39

Type: **not specified**

## **Large-scale shell model study of $\beta^-$ - decay properties of N = 126, 125 nuclei along the r-process path**

*Thursday, December 5, 2024 2:30 PM (30 minutes)*

**Presenter:** KUMAR, Anil (Center for Computational Sciences, University of Tsukuba, Tsukuba)



Contribution ID: 40

Type: **not specified**

## **Daejeon16 beyond the p-shell nuclei**

*Thursday, December 5, 2024 3:30 PM (30 minutes)*

**Presenter:** SHIN, Ik Jae (IRIS / IBS)

Contribution ID: 41

Type: **not specified**

## **Nuclear Theory in the KISTI-6 Supercomputing Era**

*Thursday, December 5, 2024 4:00 PM (30 minutes)*

**Presenter:** CHO, Kihyeon (KISTI)

Contribution ID: 42

Type: **not specified**

## Discussions

*Thursday, December 5, 2024 4:45 PM (1h 15m)*

Contribution ID: 43

Type: **not specified**

## Relativistic He-3 light-front wave function

*Friday, December 6, 2024 9:30 AM (30 minutes)*

**Presenter:** KARMANOV, Vladimir (Lebedev Physical Institute of Russian Academy of Sciences, Moscow)

Contribution ID: 44

Type: **not specified**

## **Nucleon structure from light-front quantization**

*Friday, December 6, 2024 10:00 AM (30 minutes)*

**Presenter:** ZHAO, Xingbo (Institute of Modern Physics, Chinese Academy of Sciences)

Contribution ID: 45

Type: **not specified**

## **Light Hadron structure in Minkowski space**

*Friday, December 6, 2024 10:30 AM (30 minutes)*

**Presenter:** FREDERICO, Tobias (Instituto Technologica Aeronautica, Brazil)

Contribution ID: 46

Type: **not specified**

## **Ab-initio nuclear physics from hadrons to nuclei, light-front Hamiltonian approach (Basis Light- Front Quantization)**

*Friday, December 6, 2024 11:30 AM (45 minutes)*

**Presenter:** VARY, James (Iowa State University)

Contribution ID: 47

Type: **not specified**

## Discussions and closing remarks

*Friday, December 6, 2024 12:15 PM (1h 30m)*



Contribution ID: 48

Type: **not specified**

## Free discussions

*Friday, December 6, 2024 3:00 PM (3 hours)*