

Program

(JST = UTC + 9)

25 Mar. (Tue)	26 Mar. (Wed)	27 Mar. (Thu)
10:20–10:30 Opening Tomoya Naito		
10:30–12:00 Invited Seminar Kosuke Nakano	10:30–12:00 Invited Seminar Kazuhiro Yabana	10:30–12:00 Invited Seminar Atsushi Hariki
Lunch & Coffee Break	Lunch & Coffee Break	Lunch & Coffee Break
13:30–15:00 Free Discussion	13:40–15:00 Workshop Session (3) Hitoshi Nakada Koun Shirai Cong Pan Takumi Chida	13:30–15:00 Invited Seminar Shuichiro Ebata
Coffee Break	Coffee Break	
15:20–16:40 Workshop Session (1) Nobuo Hinohara Adlen Smiri Kouhei Washiyama Jubin Park	15:20–16:40 Workshop Session (4) Masaaki Kimura Hiroki Katow Futoshi Minato Minkyu Lee	15:00–15:10 Closing Ryosuke Akashi
Coffee Break	Coffee Break	
17:00–18:00 Workshop Session (2) Hiroyuki Sagawa Jeffery Tanudji Xin Zhang	17:00–18:40 Workshop Session (5) Takashi Nakatsukasa Takeru Yokota Hiroki Kida Amrit Sarmah Kota Yoshinaga	
	19:00–21:30 Banquet & Poster	

25 March 2025 (Tue)

Opening

10:20–10:30

Tomoya Naito

(内藤智也)

(RIKEN iTHEMS)

Opening

Invited Seminar

(Chair: Shuichiro Ebata)

10:30–12:00

Kosuke Nakano

(中野晃佑)

(NIMS)

Recent developments and Future Perspectives of ab initio Quantum Monte Carlo Methods

Invited Seminar Free Discussion

CANCELLED

13:30–15:00

Masayuki Matsuo

(松尾正之)

(Dept. Phys., Niigata U.)

Collective excitations and pair correlation in nuclear density functional theory

This session will be left for discussion. The participants can discuss it among themselves or see the posters. It is strongly recommended that poster presenters put their posters before this session.

Workshop Session

(Chair: Ryosuke Akashi)

15:20–15:40

Nobuo Hinohara

(日野原伸生)

(University of Tsukuba)

(15 + 5)

Reduced-order emulator for nuclear time-dependent DFT calculations

15:40–16:00

Adlen Smiri

(MathAM-OIL AIST)

(15 + 5)

DFT Study of Tip-Enhanced Photoluminescence of Dark Exciton Activation in 2D Transition Metal Dichalcogenide Semiconductors

16:00–16:20

Kouhei Washiyama

(鷲山広平)

(University of Tsukuba)

(15 + 5)

Dynamical shape coexistence in ⁶⁰Ca

16:20–16:40

Jubin Park

(Soongsil University, South Korea)

(15 + 5)

Quantum Annealing for Optimizing Isotopic Substitutions in Fullerene: A DFT-Assisted Spectral Analysis

Workshop Session

(Chair: Nobuo Hinohara)

17:00–17:20

Hiroyuki Sagawa

(佐川弘幸)

(RIKEN Nishina Center/University of Aizu)

(15 + 5)

Subtracted Second Random Phase approximation and Lee-Suzuki similarity transformation

17:20–17:40

Jeffrey Tanudji

(Osaka University)

(15 + 5)

Computational Materials Design: DFT application in nuclear medicine

17:40–18:00

Xin Zhang

(Kyoto University)

(15 + 5)

Statistical analysis of nuclear low-lying states and double-beta decay with a covariant energy density functional

26 March 2025 (Wed)

Invited Seminar

(Chair: Atsushi Hariki)

10:30–12:00 Kazuhiro Yabana (矢花一浩) (CCS, U. Tsukuba)
Time dependent density functional theory for extremely nonlinear optics

Workshop Session

(Chair: Tomoya Naito)

13:20–13:40 Ryota Masuki (増木亮太) (The University of Tokyo) CANCELLED
(15 + 5) ~~Implementation of magnetic space group and spin space group symmetrization in first-principles electronic structure calculation~~

13:40–14:00 Hitoshi Nakada (中田仁) (Chiba University)
(15 + 5) Extension of Kohn-Sham approach to low- to intermediate-energy nucleon-nucleus elastic scattering

14:00–14:20 Koun Shirai (白井光雲) (ISIR, Osaka University)
(15 + 5) First-principles calculation of entropy of liquids

14:20–14:40 Cong Pan (Anhui Normal University, China)
(15 + 5) Recent progress on exotic nuclei in relativistic density functional theory with deformation and continuum effects

14:40–15:00 Takumi Chida (千田拓実) (The University of Tokyo)
(15 + 5) Electron density calculations by the transcorrelated method:
Application to the ionic Hubbard model and atomic systems

Workshop Session

(Chair: Kenichi Yoshida)

15:20–15:40 Masaaki Kimura (木村真明) (RIKEN Nishina Center)
(15 + 5) Low-energy nuclear reactions described by GCM

15:40–16:00 Hiroki Katow (加藤洋生) (The University of Tokyo)
(15 + 5) Emergence of a wave function geometry from a quantum electrodynamical effect

16:00–16:20 Futoshi Minato (湊太志) (Kyushu University)
(15 + 5) Analyses of transitions to 2-particle 2-hole states within second random phase approximation

16:20–16:40 Minkyu Lee (Soongsil University, South Korea)
(15 + 5) Determination of $^{12}\text{C}/^{13}\text{C}$ Ratios in Orion IRC2 Acetylene Isotopologues
Using Topsegi and Quantum Chemical Calculations

Workshop Session

(Chair: Hitoshi Nakada)

17:00–17:20 Takashi Nakatsukasa (中務孝) (University of Tsukuba)
(15 + 5) Nuclear DFT studies on light clusters

17:20–17:40 Takeru Yokota (横田猛) (RIKEN Quantum Computer Center)
(15 + 5) Analysis of three-dimensional classical liquids via density functional flow equations

17:40–18:00 Hiroki Kida (木田浩樹) (Kyushu University)
(15 + 5) Effects of antisymmetric spin-orbit forces due to three-body nuclear forces using density functional theory

18:00–18:20 Amrit Sarmah (RIKEN CCS)
(15 + 5) Decoding Protein Misfolding via Conductance Modulation in Peptide Junctions

18:20–18:40 Kota Yoshinaga (吉永孝太) (University of Tsukuba)
(15 + 5) Evaluation of shell model with density functionals understanding shell structure

Banquet with Poster Session (Held in front of the auditorium)

- 19:00–21:30** **Kenta Hagihara** (萩原健太) (University of Tsukuba)
 Electromagnetic Dependence of Nuclear Deformation and the Neutron Drip Line
 toward the r-process application
- Tatsuhiro Hattori** (服部竜大) (Institute of Science Tokyo)
 Microscopic Numerical Analysis of the Interaction Between Superfluid Neutron Quantum Vortices
 and Superconducting Proton Fluxtubes in Neutron Stars
- Atsuya Kanai** (金井敦哉) (University of Tsukuba)
 Calculation of $0\nu/2\nu\beta\beta$ decay phase space factor using Coulomb potential derived by density functional theory
- Kotaro Koga** (古賀幸太郎) (Institute of Science Tokyo)
 Development of Axially-Symmetric Skyrme Hartree-Fock Code to Realize
 an Imaginary-Time Method for Many-Body Tunneling Phenomena
- Hyukjin Kwon** (Institute of Science Tokyo)
 Self-Consistent Field Method for the Structure of Rotating Neutron Stars with DFT-Rooted Equations of State
- Paras Poswal** (National Institute of Technology Patna, India)
 A first principles study of inducing magnetism in bilayers WSe_2 by $3d$ transition metal atom doping
- Teruyuki Saito** (斉藤照之) (Japan Atomic Energy Agency)
 (proton-neutron) continuum QRPA for neutron capture reaction on neutron rich nuclei
 toward the r-process application
- Kazuyuki Sekizawa** (関澤一之) (Institute of Science Tokyo)
 Exploring Neutron 3P_2 Pairing Gap with Cooling Analysis of Cassiopeia A using BSk Equations of State
- Kenta Suzuki** (鈴木健太) (Hokkaido University)
 An exploration of shape-coexistence in Te isotopes with nuclear density functional theory
- Xiaosheng Xing** (RCNP, Osaka University)
 Parameterizing Octupole Deformation in Atomic Nuclei Via Tetrahedral and Octahedral Symmetries

27 March 2025 (Thu)

Invited Seminar

(Chair: Kazuhiro Yabana)

10:30–12:00 Atsushi Hariki (播木敦) (School of Engineering, Osaka Metropolitan U.)
DFT-Based Quantum Embedding Approaches for X-ray Spectroscopy Calculations

Invited Seminar

(Chair: Kosuke Nakano)

13:30–15:00 Shuichiro Ebata (江幡修一郎) (Dept. Phys., Saitama U./RIKEN Nishina Center)
DFT application on nuclear dynamics

Closing

15:00–15:10 Ryosuke Akashi (明石遼介) (National Institutes for Quantum Science and Technology)
Closing

Venue & Access

Auditorium (8F), Integrated Innovation Building (融合連携イノベーション推進棟: IIB), RIKEN Kobe Campus

The IIB building is connected to the east exit of **P07 Iryo Center (Shimin Byoin Mae)** [医療センター (市民病院前)] station of the **Port Liner (ポータルライナー)** train via the pedestrian deck. It takes **15 min.** from **Sannomiya (三宮)** station. You should not take a train for **Kita-Futo (北埠頭)**.

Wi-Fi Connection

You can use **eduroam** and **RIKEN guest Wi-Fi (RIKEN_guest)**. We cannot provide a visitor account of eduroam.

Organizers

- Ryosuke Akashi (明石遼介) (National Institutes for Quantum Science and Technology)
- Tomoya Naito (内藤智也) (RIKEN iTHEMS/Dept. Phys., U. Tokyo)
- Kenichi Yoshida (吉田賢市) (Research Center for Nuclear Physics, Osaka U./RIKEN Nishina Center)