Wednesday, February 18

9:00 –9:45 Registration

9:45 – 10:00 Opening — Chair: Youhei Yamaji

Opening address Masatoshi Imada (Chair)
Welcome address Takaharu Otsuka, Joint Institute for Computational Fundamental Science
Technical announcement

10:00 – 12:00 Oral Session 18-1 — Chair: Shinji Tsuneyuki

10:00 Hiroshi Nakatsuji, Quantum Chemistry Research Institute (invited) 18-1-1
Constructing quantum chemistry in Schrödinger accuracy

10:40 Seiichiro Ten-no, Kobe University (invited) 18-1-2
Recent advances in F12 molecular electronic structure theory

11:20 Masayuki Ochi, RIKEN 18-1-3
Band stuctures of 3*d* transition metal oxides calculated with the transcorrelated method

11:40 Yusuke Nomura, University of Tokyo 18-1-4
Non-empirical calculation of superconducting transition temperature for C_{60} superconductors

12:00-13:30 Lunch

13:30 – 15:10 Oral Session 18-2 — Chair: Seiichiro Ten-no

13:30 Gustavo E. Scuseria, Rice University (invited) 18-2-1
The strong correlation problem: A quantum chemistry perspective

14:10 Paul W. Ayers, McMaster University (invited) 18-2-2
Going beyond single slater determinants with mean-field cost using geminal product wavefunctions

14:50 Takahiro Mizusaki, Senshu University 18-2-3
Pfaffian approach for nuclear many-body calculations based on projected HFB states

15:10-15:40 Break

15:40 – 17:40 Oral Session 18-3 — Chair: Yutaka Utsuno

15:40 Stefano Gandolfi, Los Alamos National Laboratory (invited) 18-3-1
Quantum Monte Carlo methods for nuclear systems

16:20 Noritaka Shimizu, University of Tokyo (invited) 18-3-2
Exotic nuclear structure by nuclear shell model calculations and Monte Carlo shell model

17:00 Tomoaki Togashi, University of Tokyo 18-3-3
Electric dipole transitions in medium-heavy nuclei described with Monte Carlo shell model

17:20 Kenji Harada, Kyoto University 18-3-4
Quantum Monte Carlo study of quantum criticality on SO(N) bilinear-biquadratic chains

Thursday, February 19

9:30 – 10:50 Oral Session 19-1 — Chair: Takaharu Otsuka

9:30 Hidekatsu Nemura, University of Tsukuba (invited) 19-1-1
Stochastic variational calculation of 4He using lattice NN potential

10:10 George I. Fann, Oak Ridge National Laboratory (invited) 19-1-2
Adaptive multiresolution 3D hartree-fock-bogoliubov solver for nuclear structure

10:50-11:20 Break

11:20 – 12:20 Oral Session 19-2 — Chair: Ryotaro Arita

11:20 James S.M. Anderson, RIKEN 19-2-1
Breaking the curse of dimension for the electronic and nuclear structure Schrödinger equations

11:40 Junya Otsuki, Tohoku University (invited) 19-2-2
Dual-fermion approach to strongly correlated electron systems

12:20-13:50 Lunch

13:50 – 15:10 Oral Session 19-3 — Chair: Synge Todo

13:50 Sandro Sorella, SISSA (invited) 19-3-1
***Ab-initio* molecular dynamics by wave function correlated ansatz**

14:30 Satoshi Morita, University of Tokyo 19-3-2
Development of many-variable variational Monte Carlo method with quantum-number projections

14:50 Joji Nasu, Tokyo Institute of Technology 19-3-3
Quantum Monte Carlo study of Kitaev models

15:10-15:40 Break

15:40 – 17:20 Oral Session 19-4 — Chair: Gustavo E. Scuseria

15:40 Garnet K.-L. Chan, Princeton University (invited) 19-4-1
Ground-state phase diagram of the 2D Hubbard model from density matrix embedding

16:20 George H. Booth, King's College London (invited) 19-4-2
Stochastic wavefunction compression: Tensor decomposition, spectra, excited states and more…

17:00 Shiro Sakai, RIKEN 19-4-3
Cluster dynamical mean-field theory for real-frequency properties of cuprate high-T_c superconductors

18:00 – 20:00 Banquet — Chair: Naoki Kawashima

Friday, February 20

9:30 – 10:50 Oral Session 20-1 — Chair: Garnet K.-L. Chan

9:30 Tomotoshi Nishino, Kobe University (invited) 20-1-1
Corner line structure of the density matrix spectrum in real-space renormalization group

10:10 Takeshi Yanai, Institue for Molecular Science (invited) 20-1-2
***Ab initio* quantum chemistry using density matrix renormalization group**

10:50-11:20 Break

11:20 – 12:20 Oral Session 20-2 — Chair: Yukitoshi Motome

11:20 Toru Shiozaki, Northwestern University (invited) 20-2-1
Tensor networks with chemical nodes

12:00 Tsuyoshi Okubo, University of Tokyo 20-2-2
Ground state calculation of the generalized Kitaev-Heisenberg model using PEPS tensor network method

12:20-13:50 Lunch

13:50 – 15:10 Oral Session 20-3 — Chair: Naoki Kawashima

13:50 Emanuel Gull, University of Michigan (invited) 20-3-1
Numerically exact results for the Hubbard model

14:30 Roman Orús, Johannes Gutenberg University (invited) 20-3-2
Entanglement, tensor networks, and topological quantum order

15:10-15:40 Group Photo / Break

15:40 – 17:00 Oral Session 20-4 — Chair: Takashi Miyake

15:40 Silke Biermann, École Polytechnique (invited) 20-4-1
Electronic Coulomb correlations from first principles: rethinking the interface between electronic structure and many-body theory

16:20 Kazuma Nakamura, Kyushu Institute of Technology 20-4-2
Recent progress in *ab initio* many-body perturbation theory for correlated materials

16:40 Hiroshi Shinaoka, ETH Zürich 20-4-3
Accuracy of downfolding based on the constrained random phase approximation

17:00 – 19:30 Poster Session

Saturday, February 21

9:30 – 10:50 Oral Session 21-1 — Chair: Noritaka Shimizu

9:30 James P. Vary, Iowa State University (invited) 21-1-1
***Ab initio* nuclear structure**

10:10 Naofumi Tsunoda, University of Tokyo (invited) 21-1-2
Many-body perturbation theory in nuclei and its application to the neutron-rich nuclei

10:50-11:20 Break

11:20 – 12:20 Oral Session 21-2 — Chair: Takashi Oka

11:20 Yusuke Tsunoda, University of Tokyo 21-2-1
Large-scale shell model calculations for structure of nuclei around Z=28

11:40 Hyeon-Deuk Kim, Kyoto University 21-2-2
Nuclear and electron wave packet molecular dynamics simulation for condensed hydrogens

12:00 Youhei Yamaji, University of Tokyo 21-2-3
Excitation spectra and nonequilibrium dynamics for pump-probe photoexcitation of correlated electrons

12:20-13:50 Lunch

13:50 – 16:10 Oral Session 21-3 — Chair: Emanuel Gull

13:50 Takashi Nakatsukasa, University of Tsukuba (invited) 21-3-1
Time-dependent approaches to nuclear many-body dynamics

14:30 Takehiro Yonehara, University of Tokyo 21-3-2
Characterization of highly quasi-degenerated electronic states in non-adiabatic chemistry

14:50 Yasuhiro Yamada, University of Tokyo 21-3-3
Simulating long-term quantum dynamics -- Application to excitons in carbon-nanotube

15:10 Takashi Oka, University of Tokyo (invited) 21-3-4
Nonequilibrium dynamical mean field theory and its application to Floquet topological states

15:50 Ryo Maezono, JAIST 21-3-5
Excitons and biexcitons in symmetric elecron-hole bilayers

16:10 – 16:20 Closing