

First Tsukuba-CCS-RIKEN joint workshop on microscopic theories of nuclear structure and dynamics

December 12-13, 2016, RIKEN Nishina Center
December 14-16, 2016, Center for Computational Sciences, University of Tsukuba

Program

version 7 2016/12/9

December 12 Monday, RIKEN Nishina Center

venue: RIBF Hall (room 201), RIBF building			
Chair: Hiroyoshi Sakurai (RIKEN)			
9:30 ~ 9:35	Opening	Hideto En'yo (Director of RIKEN Nishina Center)	0:05
9:35 ~ 10:20	Recent progress of RIBF	Hideki Ueno (RIKEN)	0:45
10:20 ~ 10:50	Prospects for Breakthroughs in Low-Energy Nuclear Theory	Witold Nazarewicz (FRIB/Michigan State University)	0:30
10:50 ~ 11:15	Break		0:25
Chair: Hideki Ueno (RIKEN)			
11:15 ~ 11:45	CDCC study of halo nuclei via reaction and neutron removal cross section	Takuma Matsumoto (Kyushu University)	0:30
11:45 ~ 12:15	Isoscalar pairing and spin-isospin response	Hiroyuki Sagawa (University of Aizu/RIKEN)	0:30
12:15 ~ 13:30	Lunch		1:15
Chair: Kazuhiro Yabana (CCS, University of Tsukuba)			
13:30 ~ 14:00	Production of $N = 126$ nuclei and beyond using multinucleon transfer reactions	Yutaka Watanabe (WNSC, IPNS, KEK)	0:30
14:00 ~ 14:30	Beyond-mean-field theory for multi-octupole-phonon excitations in ^{208}Pb and subbarrier fusion of $^{16}\text{O}+^{208}\text{Pb}$	Kouichi Hagino (Tohoku University)	0:30
14:30 ~ 14:50	An application of the CSM+SVM with the complex-range Gaussian basis function to the four-body resonances	Shigeyoshi Aoyama (Niigata University)	0:20
14:50 ~ 15:05	Probing Resonances of the Dirac Equation with Complex Momentum Representation	Min Shi (RIKEN)	0:15
15:05 ~ 15:25	Microscopic reaction theory for many-body nuclear reactions	Kosho Minomo (RCNP, Osaka University)	0:20
15:25 ~ 16:00	Break		0:35
Chair: Tomohiro Uesaka (RIKEN)			
16:00 ~ 16:30	Isospin character of low-energy dipole strength in ^{20}O	Hidetada Baba (RIKEN)	0:30
16:30 ~ 17:00	Monopole and dipole transitions in ^{12}C and $^{9,10}\text{Be}$	Yoshiko Kanada-En'yo (Kyoto University)	0:30
17:00 ~ 17:20	High-precision nuclear physics inputs and their influences on the r-process simulations	Zhongming Niu (iTHES, RIKEN)	0:20
17:20 ~ 17:35	Proton-neutron correlation and Gamow-Teller transitions from ^6He , ^{10}Be , and ^{14}C to ^6Li , ^{10}B , and ^{14}N	Hiroyuki Morita (Kyoto University)	0:15
17:35 ~ 17:55	Octupole deformed nuclei in the nuclear chart based on the three dimensional mean field calculation	Shuichiro Ebata (Nuclear Reaction Data Centre, Hokkaido University)	0:20
18:30 ~	Reception (venue: Hirosawa Club)		

December 13 Tuesday, RIKEN Nishina Center

venue: RIBF Hall (room 201), RIBF building			
Chair: Luis Robledo (Universidad Autónoma de Madrid)			
9:30 ~ 10:00	Harvesting the decay properties of exotic nuclei at RIBF	Shunji Nishimura (RIKEN)	0:30
10:00 ~ 10:30	Probing nuclear many-body correlations via knockout reactions	Kazuyuki Ogata (RCNP, Osaka University)	0:30
10:30 ~ 10:45	Effects of pairing correlation on low-energy s-wave scattering in neutron-rich nuclei	Yoshihiko Kobayashi (Niigata University)	0:15
10:45 ~ 11:15	Break		0:30
Chair: Yukio Hashimoto (CCS, University of Tsukuba)			
11:15 ~ 11:45	Probing neutron-skin thickness with total reaction and charge-changing cross sections	Wataru Horiuchi (Hokkaido University)	0:30
11:45 ~ 12:15	Low-lying excitations in neutron-rich nuclei: Effects of deformation and pairing	Kenichi Yoshida (Niigata University)	0:30
12:15 ~ 13:30	Lunch		1:15
Chair: Jie Meng (Peking University)			
13:30 ~ 14:00	Nuclear structure near and beyond the neutron drip line	Takashi Nakamura (Tokyo Institute of Technology)	0:30
14:00 ~ 14:30	Nuclear Physics from Lattice QCD	Takumi Doi (RIKEN)	0:30
14:30 ~ 15:00	Quantum Self Organization and Nuclear Dynamics	Takaharu Otsuka (University of Tokyo)	0:30
Transfer to University of Tsukuba			

December 14 Wednesday, Center for Computational Sciences, University of Tsukuba

venue: International workshop room, Center for Computational Sciences			
Chair: Witold Nazarewicz (FRIB/Michigan State University)			
9:30 ~ 9:35	Welcome address	Masayuki Umemura (Director of CCS, University of Tsukuba)	0:05
9:35 ~ 10:05	Sloppy nuclear energy density functionals: Effective model reduction	Dario Vretenar (University of Zagreb)	0:30
10:05 ~ 10:35	Collective Hamiltonian for chiral mode	Jie Meng (Peking University)	0:30
10:35 ~ 10:55	New pairing observable: binding energy differences of even-even nuclei	Nobuo Hinohara (CCS, University of Tsukuba)	0:20
10:55 ~ 11:15	Break		0:20
Chair: Nobuo Hinohara (CCS, University of Tsukuba)			
11:15 ~ 11:45	Energy density functional based on a finite-range potential and its implementation on axial HFB solver	Markus Kortelainen (University of Jyväskylä)	0:30
11:45 ~ 12:15	Octupole correlations in a full-symmetry restoring framework	Luis Robledo (Universidad Autónoma de Madrid)	0:30
12:15 ~ 13:30	Lunch		1:15
Chair: Cédric Simenel (Australian National University)			
13:30 ~ 14:00	Quasiparticle RPA calculation with Skyrme energy density functional for rotating unstable nuclei	Masayuki Yamagami (University of Aizu)	0:30
14:00 ~ 14:30	Exotic states -- cluster model v.s. DFT	Naoyuki Itagaki (YITP, Kyoto University)	0:30
14:30 ~ 15:00	Probing nuclear clustering from nuclear responses	Masaaki Kimura (Hokkaido University)	0:30
15:00 ~ 15:30	Break		0:30
Chair: Dario Vretenar (University of Zagreb)			
15:30 ~ 16:00	Josephson effect in transfer reactions, effect of the restoration of the gauge angle symmetry in reactions	Guillaume Scamps (CCS, University of Tsukuba)	0:30
16:00 ~ 16:20	Isospin density dependence of effective pairing from asymmetric nuclear matter to finite nuclei and medium polarization	Shisheng Zhang (Beihang University)	0:20
16:20 ~ 16:40	Proton-neutron mixed density functional calculations with strong-force isospin symmetry breaking	Koichi Sato (Osaka City University)	0:20
16:40 ~ 16:55	Relativistic Brueckner-Hartree-Fock Theory for Finite Nuclei	Shihang Shen (Peking University/RIKEN)	0:15
16:55 ~ 17:15	Finite amplitude method for QRPA in three-dimensional coordinate	Kouhei Washiyama (CCS, University of Tsukuba)	0:20
17:15 ~ 17:35	From Functional Renormalization Group to Density Functional Theory --- a case study of 0D anharmonic oscillator	Haozhao Liang (RIKEN)	0:20

December 15 Thursday, Center for Computational Sciences, University of Tsukuba**venue: International workshop room, Center for Computational Sciences**

Chair: Carlos Bertulani (Texas A&M University-Commerce)

9:30 ~ 10:00	Recent progress in the time-dependent description of fission	Denis Lacroix (IPN Orsay)	0:30
10:00 ~ 10:30	Large scale static and time-dependent Hartree-Fock calculations and twist-averaged boundary conditions	Bastian Schütrumpf (NSCL/Michigan State University)	0:30
10:30 ~ 10:50	Gogny-TDHFB calculation of $^{20}\text{O} + ^{20}\text{O}$ head-on collision	Yukio Hashimoto (CCS, University of Tsukuba)	0:20
10:50 ~ 11:15	Break		0:25

Chair: Haozhao Liang (RIKEN)

11:15 ~ 11:45	Constraining the nuclear symmetry energy from collective excitations	Nils Paar (University of Zagreb)	0:30
11:45 ~ 12:15	Second proton-neutron random phase approximation studied by the Lipkin model in the SU(4)	Futoshi Minato (JAEA)	0:30
12:15 ~ 13:30	Lunch		1:15

Chair: Dean Lee (North Carolina State University)

13:30 ~ 14:00	Nuclear structure and excitations by large-scale shell model calculations	Noritaka Shimizu (CNS, University of Tokyo)	0:30
14:00 ~ 14:30	Towards reliable double-beta decay matrix elements with uncertainties	Javier Menéndez (University of Tokyo)	0:30
14:30 ~ 14:45	Solving Dirac equations in 3D lattice with inverse Hamiltonian method and spectral method	Zhengxue Ren (Peking University)	0:15
14:45 ~ 15:00	Self-consistent Collective Coordinate in Richardson model	Fang Ni (University of Tsukuba)	0:15
15:00 ~ 15:30	Break		0:30

Chair: Gianluca Colò (Università degli Studi di Milano and INFN Milano)

15:30 ~ 16:00	Ground state properties and response functions in DFT	Carlos Bertulani (Texas A&M University-Commerce)	0:30
16:00 ~ 16:30	On the completeness of RPA solutions	Hitoshi Nakada (Chiba University)	0:30
16:30 ~ 16:50	Self-consistent collective coordinate for reaction path and inertial mass	Kai Wen (CCS, University of Tsukuba)	0:20
16:50 ~ 17:10	Applied microscopic model to macroscopic dynamical calculation for synthesis of superheavy elements	Yoshihiro Aritomo (Kindai University)	0:20
17:10 ~ 17:30	Calculation of collective excitation of inner crust using density functional theory	Tsunenori Inakura (Niigata University)	0:20

December 16 Friday, Center for Computational Sciences, University of Tsukuba

venue: International workshop room, Center for Computational Sciences

Chair: Denis Lacroix (IPN Orsay)

9:30 ~ 10:00	Effect of Pauli repulsion on deep sub-barrier fusion	Cédric Simenel (Australian National University)	0:30
10:00 ~ 10:30	A roadmap of the microscopic theory for spontaneous fission	Jhilam Sadhukhan (Variable Energy Cyclotron Centre)	0:30
10:30 ~ 11:00	A unified approach for nuclear excitations	Gianluca Colò (Universita degli Studi di Milano and INFN Milano)	0:30
11:00 ~ 11:30	Break		0:30

Chair: Takashi Nakatsukasa (CCS, University of Tsukuba)

11:30 ~ 12:00	Direct calculation of light nucleus in lattice QCD	Takeshi Yamazaki (University of Tsukuba)	0:30
12:00 ~ 12:20	Current status for two baryon systems in lattice QCD I. Difficulties in the direct method	Sinya Aoki (YITP, Kyoto University)	0:20
12:20 ~ 12:40	Current status for two baryon-systems in lattice QCD II: HAL QCD potential method and diagnosis of the direct method	Takumi Iritani (RIKEN)	0:20
12:40 ~ 13:10	Nuclear binding near a quantum phase transition	Dean Lee (North Carolina State University)	0:30
12:40 ~	Closing		