APCTP Focus Program in Nuclear Physics 2019
Nuclear Many-Body Theories: Beyond the Mean Field Approaches

https://www.apctp.org/plan.php/nuclearfocus-2019

July 1-10, 2019
Asia Pacific Center for Theoretical Physics, Pohang, Korea

TIME TABLE

	July 1 (Mon)	
	Chair: Y. Oh	
9:00 AM - 9:50 AM	Registration	
9:50 AM - 10:00 AM	Welcome and Introductory Remarks	Y. Bang (President of APCTP)
10:00 AM - 12:00 PM	Variational and Parquet-diagram theory for strongly correlated normal and super-fluid systems	E. Krotscheck
12:00 PM - 2:00 PM	Lunch	
	Chair: J. W. Clark	
2:00 PM - 4:00 PM	Nuclear many-body theory from microscopic chiral two- and three-nucleon forces	J. W. Holt
4:00 PM - 6:00 PM	Discussion	
6:00 PM	Reception	
	July 2 (Tue)	
	Chair: J. W. Holt	
10:00 AM - 12:00 PM	Short range correlations in nuclei	H. Feldmeier
12:00 PM - 2:00 PM	Lunch	
	Chair: M. Grasso	
2:00 PM - 4:00 PM	Relativistic density functional theory for nuclear structure	J. Meng
4:00 PM - 6:00 PM	Discussion	

	July 3 (Wed)	
	Chair: E. Krotscheck	
10:00 AM - 12:00 PM	Nuclear response beyond one-loop approximation: from zero to finite temperature	E. Litvinova
12:00 PM - 2:00 PM	Lunch	
	Chair: M. Tohyama	
2:00 PM - 4:00 PM	Ground-state correlations from quasiparticle-vibration coupling in nuclei	C. Robin
4:00 PM - 6:00 PM	Discussion	
	July 4 (Thu)	
	Chair: Y. Kim	
10:00 AM - 12:00 PM	A beyond-mean-field description for nuclear excitation spectra: Applications of the subtracted SRPA	M. Grasso
12:00 PM - 2:00 PM	Lunch	
	Chair: E. Litvinova	
2:00 PM - 4:00 PM	Symmetry energy, its components and nuclear structure properties at finite temperature	A. N. Antonov
4:00 PM - 6:00 PM	Discussion	
	July 5 (Fri)	
	Mini-Workshop & Banquet (See the attached time table.)	
	July 6 (Sat)	Excursion & Dinner together
	July 7 (Sun)	No Seminars - Free Time

	July 8 (Mon)	
	Chair: P. Papakonstantinou	
10:00 AM - 12:00 PM	Machine learning for model refinement in nuclear physics	J. W. Clark
12:00 PM - 2:00 PM	Lunch	
	Chair: H. Feldmeier	
2:00 PM - 4:00 PM	Applications of time-dependent density-matrix approach	M. Tohyama
4:00 PM - 6:00 PM	Discussion	
	July 9 (Tue)	
	Chair: A. N. Antonov	
10:00 AM - 12:00 PM	Nuclear equation of state for hot dense matter	Y. Lim
12:00 PM - 2:00 PM	Lunch	
	Chair: H.-M. Choi	Chair: H.-M. Choi
2:00 PM - 3:00 PM	Application of DJBUU to heavy ion collisions	C.-H. Lee
3:00 PM - 4:00 PM	Parity doublet model in dense matter and more	Y. Kim
4:00 PM - 6:00 PM	Discussion	
	July 10 (Wed)	
	Chair: C.-H. Lee	
10:00 AM - 12:00 PM	Effective nuclear force, finite (hyper)nuclei, and neutron star from quarks: the QMC model	K. Tsushima
12:00 PM - 2:00 PM	Lunch	
2:00 PM - 4:00 PM	Discussion & Adjourn	

TIME TABLE (mini-workshop): July 5th (Fr)

July 5 (Friday)		
	Session 1 (Chair: K. Tsushima)	
9:30 AM - 10:00 AM	Examples of nucleon correlation effects on nuclear structure and reactions	A. N. Antonov
10:00 AM - 10:30 AM	Effects of the tensor force on the properties of finite nuclei within Skyrme energy density functional theory	Ligang Cao
10:30 AM - 11:00 AM	Break	
	Session 2 (Chair: L. Cao)	
11:00 AM - 11:30 AM	Self-consistent multiparticle-multihole configuration mixing description of nuclei	C. Robin
11:30 AM - 12:00 PM	Collective excitations in atomic nuclei in the relativistic point coupling model separable pairing	D. Vale
12:00 PM - 2:00 PM	Lunch	
	Session 3 (Chair: T. Mart)	
2:00 PM - 2:30 PM	Random-phase approximations and the nuclear force	P. Papakonstantinou
2:30 PM - 3:00 PM	KIDS energy density functional for nuclei and nuclear matter	C. H. Hyun
3:00 PM - 3:30 PM	Neutron star and gravitational waves	Y.-M. Kim
3:30 PM - 4:00 PM	Break	
	Session 4 (Chair: C. H. Hyun)	
4:00 PM - 4:30 PM	Baryon properties in a strong magnetic field	U. Yakhshiev
4:30 PM - 5:00 PM	Vector mesons in nuclear matter and nuclei	J. Cobos-Martinez
5:00 PM - 5:30 PM	Recent progress in kaon photoproduction of the nucleon	T. Mart
6:00 PM - 7:30 PM	Banquet	

List of Invited Speakers

Speaker	Title
A. N. Antonov (Bulgarian Academy of Sciences)	Symmetry energy, its components and nuclear structure properties at finite temperature
J. W. Clark (Washington Univ., St. Louis)	Machine learning for model refinement in nuclear physics
H. Feldmeier (GSI, Darmstadt)	Short range correlations in nuclei
M. Grasso (IPN, Orsay)	A beyond-mean-field description for nuclear excitation spectra: Applications of the subtracted SRPA
J. W. Holt (Texas A&M Univ.)	Nuclear many-body theory from microscopic chiral two- and three-nucleon forces
Y. Kim (IBS)	Parity doublet model in dense matter and more
E. Krotscheck (SUNY Buffalo)	Variational and Parquet-diagram theory for strongly correlated normal and super-fluid systems
C.-H. Lee (Pusan National Univ.)	Application of DJBUU to heavy ion collisions
Y. Lim (TU Darmstadt)	Nuclear equation of state for hot dense matter
E. Litvinova (Western Michigan Univ.)	Nuclear response beyond one-loop approximation: from zero to finite temperature
J. Meng (Peking Univ.)	Relativistic density functional theory for nuclear structure
C. Robin (INT, Univ. of Washington)	Ground-state correlations from quasiparticle-vibration coupling in nuclei
M. Tohyama (Kyorin Univ.)	Applications of time-dependent density-matrix approach
K. Tsushima (Univ. Cruzeiro do Sul)	Effective nuclear force, finite (hyper)nuclei, and neutron star from quarks: the QMC model

List of Mini-Workshop Speakers

Speaker	Title
A. N. Antonov (Bulgarian Academy of Sciences)	Examples of nucleon correlation effects on nuclear structure and reactions
L. Cao (North China Electric Power Univ.)	Effects of the tensor force on the properties of finite nuclei within Skyrme energy density functional theory
J. Cobos-Martinez (IPN, Mexico)	Vector mesons in nuclear matter and nuclei
C. H. Hyun (Daegu Univ.)	KIDS energy density functional for nuclei and nuclear matter
Y.-M. Kim (UNIST)	Neutron star and gravitational waves
T. Mart (Univ. Indonesia)	Recent progress in kaon photoproduction of the nucleon
P. Papakonstantinou (IBS)	Random-phase approximations and the nuclear force
C. Robin (INT, Univ. Washington)	Self-consistent multiparticle-multihole configuration mixing description of nuclei
D. Vale (Univ. Zagreb)	Collective excitations in atomic nuclei in the relativistic point coupling model separable pairing
U. Yakhshiev (Inha Univ.)	Baryon properties in a strong magnetic field
X.-R. Zhou (East China Normal Univ.)	Effects of deformation, pairing and tensor correlation on the evolution of bubble structure within the Skyrme-Hartree-Fock method