

# Advanced many-body and statistical methods in mesoscopic systems III

September 4-8, Buşteni, Romania

## -Program-

Sunday, 3rd of September (Arrival)	
17.00-19.00	Registration
19.00-21.00	Dinner

Monday, 4th of September (Opening, ELI-NP & General Sessions)	
7.00-9.00	Breakfast
Introduction (Chair: Doru Delion)	
10.00-10.30	Doru Delion (IFIN-HH, Romania) Aurelian Isar (IFIN-HH, Romania)
Morning Session (Chair: Doru Delion)	
10.30-11.20	Nicolae V. Zamfir (IFIN-HH, Romania) <i>“Extreme Light Infrastructure – Nuclear Physics Present Status and Perspectives”</i>
11.20-12.10	Dimiter L. Balabanski (ELI-NP, Romania) <i>“Day-one photonuclear physics at ELI-NP”</i>
12.10-12.30	Coffee break
12.30-13.20	Dan Filipescu (ELI-NP, Romania) <i>“Photo-neutron reactions induced by strong laser fields”</i>
13.20-14.10	Florin Negoită (ELI-NP, Romania) <i>“Commissioning Experiments for the ELI-NP 10 PW Lasers”</i>
14.15-16.00	Lunch
Afternoon Session (Chair: Roberto Liotta)	
16.00-16.50	Mark Caprio (University of Notre Dame, USA) <i>“Symplectic no-core configuration interaction framework”</i>
16.50-17.40	Hai-Zhou Lu (Southern University of Science and Technology, China) <i>“Anomalous phase shift of quantum oscillations and 3D quantum Hall effect in topological semimetals”</i>
19.00-21.00	Dinner

<b>Tuesday, 5th of September (Nuclear Structure Sessions)</b>	
<b>7.00-9.00</b>	<b>Breakfast</b>
<b>Morning Session (Chair: Jorge Dukelsky)</b>	
9.00-9.50	Neculai Sandulescu (IFIN-HH, Romania) <i>“Pairing, alpha-like quartetting and Yang criterion for identifying long range superfluid-type correlations”</i>
9.50-10.40	Michelangelo Sambataro (Istituto Nazionale di Fisica Nucleare, Sezione di Catania , Italy) <i>“Quartet structure of <math>N=Z</math> nuclei”</i>
10.40-11.30	Adriana Raduta (IFIN-HH, Romania) <i>“Consequences of hyperon pairing for cooling of neutron stars”</i>
<b>11.30-11.50</b>	<b>Coffee break</b>
11.50-12.40	Nikolai Arsenyev (Joint Institute for Nuclear Research, Russia) <i>“Microscopic description of pygmy dipole resonance in neutron-rich nuclei”</i>
12.40-13.30	Virgil Baran (University of Bucharest, Romania) <i>“The macroscopic picture of Pygmy dipole resonance”</i>
<b>13.30-15.00</b>	<b>Lunch</b>
<b>Afternoon Session (Chair: Neculai Sandulescu)</b>	
15.00-15.50	Yifei Niu (ELI-NP, Romania) <i>“Quasiparticle vibration coupling effects on nuclear beta-decay”</i>
15.50-16.20	Radu Budaca (IFIN-HH, Romania) <i>“Energy dependent collective excitations in even-even nuclei”</i>
16.20-16.50	Petrica Buganu (IFIN-HH, Romania) <i>“Quasi-exact solution for the Bohr-Mottelson Hamiltonian”</i>
16.50-17.20	Daniel Negrea (IFIN-HH, Romania) <i>“Proton-neutron pairing and quartteting in odd-odd <math>N=Z</math> nuclei”</i>
<b>19.00-21.00</b>	<b>Dinner</b>

<b>Wednesday, 6th of September (Topological Insulators Sessions)</b>	
<b>7.00-9.00</b>	<b>Breakfast</b>
<b>Morning Session (Chair: Yury M. Shukrinov)</b>	
9.00-9.45	Jorge Dukelsky (Instituto de Estructura de la Materia, Spain) <i>“Exactly solvable Richardson-Gaudin models in condensed matter and nuclear physics”</i>
9.45-10.30	Alexandru Aldea (INCDFM, Romania) <i>“Chiral/nonchiral edge states in two-dimensional lattices”</i>
<b>10.30-10.50</b>	<b>Coffee break</b>
10.50-11.40	Dimitrie Culcer (University of New South Wales, Australia) <i>“Quantum kinetic theory of magneto-transport in topological materials”</i>
11.40-12.30	Yang Zhao (Nanyang Technological University, Singapore) <i>“Effect of Off-Diagonal Exciton-Phonon Coupling on Intramolecular Singlet Fission”</i>
<b>12.30-14.00</b>	<b>Lunch</b>
14.00-19.00	Excursions around Buşteni (depending on weather conditions)
<b>19.00-21.00</b>	<b>Dinner</b>

<b>Thursday, 7th of September (Decay Processes &amp; Open Quantum Systems Sessions)</b>	
<b>7.00-9.00</b>	<b>Breakfast</b>
<b>Morning Session (Chair: Michelangelo Sambataro)</b>	
9.00-9.50	Roberto Liotta (KTH Royal Institute of Technology, Sweden) <i>“Physical interpretation of quantities in the complex energy plane”</i>
9.50-10.40	Zhongzhou Ren (Nanjing University, China) <i>“Clustering effects in nuclei”</i>
10.40-11.30	Chong Qi (KTH Royal Institute of Technology, Sweden) <i>“Shell model description of heavy nuclei and abnormal collective motions”</i>
<b>11.30-11.50</b>	<b>Coffee break</b>
11.50-12.40	Mihail Mirea (IFIN-HH, Romania) <i>“Odd-even effect and nuclear inertia in fission processes from the microscopic equations of motion“</i>
12.40-13.30	Doru Delion (IFIN-HH, Romania) <i>“Emission processes in strong electromagnetic fields”</i>
<b>13.30-15.00</b>	<b>Lunch</b>
<b>Afternoon Session (Chair: Chong Qi)</b>	
15.00-15.30	Ion Silisteanu (IFIN-HH, Romania) <i>“Systematics of alpha-decay and spontaneous fission half-lives of super-heavy nuclei”</i>
15.30-16.00	Claudia Anghel (IFIN-HH, Romania) <i>“Competition between <math>\alpha</math>-decay and spontaneous fission at superheavy nuclei around 270Hs.”</i>
16.00-16.30	Virgil V. Baran (IFIN-HH, Romania) <i>“Alpha resonances in atomic nuclei”</i>
16.30-17.00	Alexandru Dumitrescu (IFIN-HH, Romania) <i>“Recent theoretical advances regarding <math>\alpha</math>-spectroscopy”</i>
<b>17.00-17.15</b>	<b>Coffee break</b>
17.15-17.30	Aurelian Isar (IFIN-HH, Romania) <i>“Dynamics of quantum correlations in bipartite Gaussian open quantum systems”</i>
17.30-17.45	Tatiana Mihaescu (IFIN-HH, Romania) <i>“Evolution of quantum steering in Gaussian noisy channels”</i>
17.45-18.00	Serban Suci (IFIN-HH, Romania) <i>“Quantum Information Resources”</i>
<b>19.00-22.00</b>	<b>Conference Dinner</b>

<b>Friday, 8th of September (Superconductivity and Statistics Sessions)</b>	
<b>7.00-9.00</b>	<b>Breakfast</b>
<b>Morning Session (Chair: Yang Zhao)</b>	
9.00-9.50	Yury M. Shukrinov (Joint Institute for Nuclear Research, Russia) <i>“Modeling of Josephson Nanostructures”</i>
9.50-10.20	Ilhom Rahmonov (Joint Institute for Nuclear Research, Russia) <i>“Peculiarities of the phase dynamics of a ring system of parallel Josephson junctions”</i>
10.20-10.50	Alexei Zubarev (INFLPR, Romania) <i>“The c-axis traveling charge wave in a system of coupled Josephson junctions with large dissipation”</i>
10.50-11.20	Marina Cuzminschi (IFIN-HH, Romania) <i>“Impact of the external monochromatic radiation on the chaotic behavior of the coupled system of Josephson junctions”</i>
<b>11.20-11.40</b>	<b>Coffee break</b>
11.40-12.30	Arijit Bhattacharyay (Indian Institute for Science Education and Research - Pune, India) <i>“Directed transport in equilibrium and modified Boltzmann distribution in systems with conformation dependent damping”</i>
12.30-13.20	Dragos V. Anghel (IFIN-HH, Romania) <i>“Beyond the phenomenology of the BCS theory”</i>
<b>13.20-15.00</b>	<b>Lunch</b>
<b>Afternoon Session (Chair: Dragos V. Anghel)</b>	
15.00-15.50	Alexandru Nemnes (IFIN-HH, Romania) <i>“Dynamic hysteresis effects in perovskite solar cells”</i>
15.50-16.20	Alexandru Parvan (Joint Institute for Nuclear Research, Russia) <i>“Finite size effects in the thermodynamics of a free neutral scalar field”</i>
16.20-16.50	Claudiu Caraiani (IFIN-HH, Romania) <i>“The effect of the phonon gas dimensionality on the electron-phonon heat exchange in layered nanosystems”</i>
16.50-17.20	Gamaliel Torres (Metropolitan Autonomous University, Mexico) <i>“Unfoldingless determination of random-matrix spectral fluctuations”</i>
<b>Closing (Chair: Doru Delion)</b>	
<b>19.00-21.00</b>	<b>Dinner</b>

<b>Saturday, 9th of September</b>	
<b>7.00-9.00</b>	<b>Breakfast</b>
<b>9.00</b>	<b>Departure</b>