



Nuclear Structure and Dynamics II

July 9th to 13th, 2012

Opatija, Croatia

Scientific Program

July 9-13, 2012

Opatija, Croatia

Organised by:

University of Zagreb
Ruđer Bošković Institute

1 Monday, July 9th

Opening Session

- Congress Hall -

08:45 - 08:50: Opening

08:50 - 09:20: Faiçal Azaiez, "Introductory talk"

Nuclear structure I

- Congress Hall -

chair: Đuro Miljanić

09:20 - 09:50: Yoshiko Kanada-En'yo, "Cluster and deformation in C isotopes"

09:50 - 10:20: Alain Gillibert, "Deeply-bound Nucleon Removal and Transfer from Light Exotic Nuclei"

10:20 - 10:40: Martin Freer, "Challenges to understanding the structure of light nuclei"

10:40 - 11:00: Elias Khan, "How atomic nuclei cluster"

Nuclear dynamics I

- Congress Hall -

chair: Lorenzo Corradi

11:30 - 12:00: Birger B. Back, "Light ion transfer reactions with the Helios spectrometer"

12:00 - 12:30: Thomas Aumann, "Quasi-free knockout reactions with high-energy radioactive beams"

12:30 - 12:50: Sait Umar, "Dynamic Microscopic Theory of Fusion Using DC-TDHF"

12:50 - 13:10: Daniele Montanari, "Heavy-Ion Transfer Reactions at Large Internuclear Distances"

13:10 - 13:30: Dorel Bucurescu, "Fine structure of alpha decay of trans-lead nuclei - an intriguing nuclear structure paradigm"

Oral posters I

- Congress Hall -

chair: Nils Paar

15:00 - 15:05: Sorin Pascu, "Experimental evidence for the presence of double octupole states in ^{240}Pu "

15:05 - 15:10: Yulia Itkis, "Competition between fusion-fission and quasifission in the reactions with heavy ions leading to the formation of Hs"

15:10 - 15:15: Vazgen Sargsyan, "Effects of nuclear deformation and neutron transfer in capture processes, and fusion hindrance at deep sub-barrier energies"

15:15 - 15:20: Magdalena Matejska-Minda, "Lifetime measurement of high-lying short lived states in ^{69}As "

15:20 - 15:25: Pierre Morfouace, " $^{72}\text{Zn}(d,^3\text{He})^{71}\text{Cu}$ transfer reaction"

- 15:25 - 15:30: Vladimir Rachkov, "Effect of neutron transfer in the fusion process near and below the Coulomb barrier"
- 15:30 - 15:35: Mohamed Reda Oudih, "Microscopic investigation of structural evolution in even-even $N=60$ isotones"
- 15:35 - 15:40: Naziha Benhamouda, "Particle-number fluctuations and neutron-proton pairing effects on proton and neutron radii of even-even $N=Z$ nuclei"
- 15:40 - 15:45: Sadao Momota, "Reduced dispersion of transverse momentum of fragmentation products observed at 290 MeV/u"

Nuclear structure 2

- Congress Hall -

chair: Emil Běták

- 16:00 - 16:30: Adam Maj, "Shape evolution of heated and rapidly rotating nuclei studied with GDR - status and new perspectives with the PARIS array"
- 16:30 - 17:00: Atilla Krasznahorkay, "Neutron-skin thickness from the study of the giant dipole resonance"

Nuclear structure 3

- Congress Hall -

chair: Jie Meng

- 17:30 - 17:50: Georgios Lalazissis, "Density-dependent Covariant Energy Density Functionals"
- 17:50 - 18:10: Haozhao Liang, "Local covariant density functional constrained by the relativistic Hartree-Fock theory"
- 18:10 - 18:30: Nicola Lo Iudice, "Large scale shell model study of nuclear spectroscopy in nuclei around ^{132}Sn "
- 18:30 - 18:50: Sophie Péru, "Some exploitations of the self-consistent QRPA approach with the Gogny force"

Nuclear dynamics 2

- Camelia -

chair: Angela Bonaccorso

- 17:30 - 17:50: Franjo Krmpotić, "Dynamics of Hypernuclear Nonmesonic Weak Decay"
- 17:50 - 18:10: Chinmay Basu, "Properties of the alpha cluster states of ^{212}Po from elastic scattering of alpha particles from ^{208}Pb "
- 18:10 - 18:30: Galina Knyazheva, "Properties of quasifission in heavy ion induced reactions"
- 18:30 - 18:50: Giovanna Montagnoli, "Fusion of $^{32}\text{S} + ^{48}\text{Ca}$ near and below the Coulomb barrier: a case where transfer couplings dominate?"
- 18:50 - 19:10: Francesco Cappuzzello, "Nuclear rainbow in the $^{16}\text{O} + ^{27}\text{Al}$ system: The role of couplings at energies far above the barrier"

2 Tuesday, July 10th

Nuclear astrophysics

- Congress Hall -

chair: Martin Freer

08:30 - 09:00: Brian Fulton, "Recent progress in nuclear astrophysics"

09:00 - 09:30: Stéphane Goriely, "The r-process nucleosynthesis: nuclear and astrophysics challenges"

09:30 - 09:50: Valery Zagrebaev, "Formation of superheavy nuclei in astrophysical r-process"

09:50 - 10:10: Alexis Diaz-Torres, "Quantum partner-dance of two interacting ^{12}C nuclei fuels"

10:10 - 10:30: Tomás Rodríguez, "Application of nuclear density functionals to lepton number violating weak processes"

Nuclear astrophysics and light nuclei

- Congress Hall -

chair: Wolfram von Oertzen

11:00 - 11:30: Phil Woods, "Experiments at the interface between nuclear structure and explosive nuclear astrophysics"

11:30 - 12:00: Gabriel Martínez-Pinedo, "Challenges in explosive nucleosynthesis of heavy elements"

12:00 - 12:20: Vladilen Goldberg, "Unusual states in light nuclei"

12:20 - 12:40: Makoto Ito, "Studies of neutron-excess systems from bounds to continuum"

12:40 - 13:00: Sergey Sidorchuk, "Study of low-energy spectra of the helium isotopes $^{8,9,10}\text{He}$ in the experiments with a tritium target"

Oral posters 2

- Congress Hall -

chair: Neven Soić

15:00 - 15:05: Jan Mierzejewski, "Modeling incomplete fusion reactions"

15:05 - 15:10: Milivoj Uroić, "Reactions induced by ^7Li beam and optimization of silicon detector telescope"

15:10 - 15:15: Yulia Parfenova, "Studies of few-body dynamics in dripline nuclei at FLNR, JINR"

15:15 - 15:20: Laura Grassi, "Anomalous behaviour of DSSSDs"

15:20 - 15:25: Haris Đapo, "Primordial lithium abundance and massive particles"

15:25 - 15:30: Vivek Parkar, "Validation of cluster structures for ^9Be through Coupled channel calculations"

15:30 - 15:35: Lovro Prepolec, " $^{13}\text{C}+^4\text{He}$ resonant elastic scattering on thick gas target"

15:35 - 15:40: Lars Netterdon, "Experimental studies of p-process nucleosynthesis"

15:40 - 15:45: Adhikari Sucheta, "Observation of breakup transfer process for the bound states of ^{16}O populated from $^{12}\text{C}(^6\text{Li},d)$ reaction at 20 MeV"

15:45 - 15:50: Vedrana Tokić, "Study of ^{24}Mg resonances relevant for carbon burning nucleosynthesis"

Nuclear structure 4

- Congress Hall -

chair: Faiçal Azaiez

16:00 - 16:30: Hiroyoshi Sakurai, "Highlights and future plans at RIBF"

16:30 - 17:00: Michael Block, "Extending Mass Measurements and Laser Spectroscopy to the Heaviest Elements"

Nuclear structure 5

- Congress Hall -

chair: Takaharu Otsuka

17:30 - 17:50: Xavier Viñas, "Symmetry energy properties of bulk matter estimated from neutron skin thickness in finite nuclei"

17:50 - 18:10: Veerle Hellemans, "Finite-size instabilities in nuclear energy density"

18:10 - 18:30: Zhipan Li, "Energy density functional description of nuclear low-lying spectrum and shape transition"

18:30 - 18:50: Jiri Kroll, "Scissors Mode Resonances Built on Excited Levels in Gd Nuclei Studied from Neutron Capture in Resonance Region"

18:50 - 19:10: Danilo Gambacurta, "Low-lying dipole response in the stable $^{40,48}\text{Ca}$ nuclei with the second random-phase approximation"

Nuclear astrophysics and dynamics

- Camelia -

chair: Matej Lipoglavšek

17:30 - 17:50: Alain Goasduff, " $^{12}\text{C}+^{16}\text{O}$: properties of sub-barrier resonances gamma-decay"

17:50 - 18:10: Cristina Bordeanu, " $^3\text{He}+^4\text{He}$ astrophysical factor study using activation method"

18:10 - 18:30: Guillame Hupin, "Ab Initio Calculations of Light-Ion Fusion Reactions"

18:30 - 18:50: Jelena Gajević, "Electron Screening in Nickel"

3 Wednesday, July 11th

Nuclear dynamics 3

- Congress Hall -

chair: Giovanni Pollarolo

08:30 - 09:00: Antonio M. Moro, "Core excitation effects in the breakup of halo nuclei"

09:00 - 09:30: Pierpaolo Figuera, "Collisions Induced by Halo and Weakly Bound Nuclei Around the Coulomb Barrier: Recent Results at INFN-LNS Catania"

09:30 - 09:50: Pierre Descouvemont, "Microscopic description of reactions involving exotic nuclei"

09:50 - 10:10: Konstanze Boretzky, "Low-Lying Dipole Strength in Exotic Neutron-Rich and Neutron-Deficient Nuclei"

10:10 - 10:30: Alinka Lépine-Szily, "Radioactive Ion Beams in Brasil (RIBRAS)-Recent results"

Nuclear structure 6

- Congress Hall -

chair: Hiroyoshi Sakurai

11:00 - 11:30: Takaharu Otsuka, "Perspectives of Monte-Carlo Shell Model"

11:30 - 12:00: Volker Werner, "Lifetimes and g-factors in the $A \approx 100$ region"

12:00 - 12:20: Hans Geissel, "Recent Experimental Results with Uranium Fragments at the Present FRS"

12:20 - 12:40: Andrei Andreyev, "Shape coexistence and charge radii in the lead region studied by in-source laser spectroscopy at RILIS-ISOLDE"

12:40 - 13:00: Nicu Sandulescu, "Alpha-like quartet correlations and proton-neutron pairing in $N=Z$ nuclei"

4 Thursday, July 12th

Nuclear structure 7

- Congress Hall -

chair: Giacomo de Angelis

08:30 - 09:00: Enrico Farnea, "Results from the experimental campaign of the AGATA Demonstrator at LNL"

09:00 - 09:30: Peter Reiter, "MINIBALL γ -ray Spectroscopy far from Stability"

09:30 - 09:50: Tommi Eronnen, "Recent Penning trap mass measurement results of neutron rich nuclei"

09:50 - 10:10: Amiram Leviatan, "Order and chaos across a first-order quantum phase transition in nuclei"

10:10 - 10:30: Pedro Sarriguren, "Nuclear shape transitions in neutron-rich medium-mass nuclei"

Nuclear structure 8

- Congress Hall -

chair: Peter Ring

11:00 - 11:30: Jacek Dobaczewski, "New nonrelativistic energy density functionals for low-energy nuclear phenomena"

11:30 - 12:00: Gianluca Colò, "A microscopic particle-vibration coupling model applied to single-particle states and giant resonances"

12:00 - 12:20: Jie Meng, "Magnetic and Antimagnetic rotation: a microscopic description"

12:20 - 12:40: Jose-Enrique García-Ramos, "Concealed configuration mixing and shape coexistence in the platinum nuclei"

12:40 - 13:00: Peter Schuck, "Accurate Masses from a 2-3 parameter Kohn-Sham Density Functional"

Oral posters 3

- Congress Hall -

chair: Lorenzo Corradi

15:00 - 15:05: William Collis, "Improved Local and Global Nuclear Mass Relations"

15:05 - 15:10: Bing-nan Lu, "A multi-dimensional constrained covariant density functional theory with non-axial and reflection asymmetric deformations"

15:10 - 15:15: Toni Petrovič, "Real-time algorithm for robust coincidence search"

15:15 - 15:20: Dankrad Feist, "Skyrmions"

15:20 - 15:25: Saturnino Marcos, "Nuclear relativistic Hartree-Fock calculations with pions interacting with a scalar field"

15:25 - 15:30: Nuno Fiuza de Barros, "Present status on the search for Neutrinoless Double Beta Decay"

15:30 - 15:35: Serdar Ünlü, "The Study of two neutrino double beta decay by including Fermi contributions"

15:35 - 15:40: Arumugam Paramasivan, "Antikaons in extended relativistic mean field study of neutron stars"

Nuclear structure 9

- Congress Hall -

chair: Alahari Navin

16:30 - 16:50: Stuart Pittel, "Systematic shell-model study of isovector and isoscalar pairing in the 2p1f shell"

16:50 - 17:10: Alberto Andrighetto, "SPES: the INFN radioactive beam facility for nuclear physics"

17:10 - 17:30: Domenico Torresi, "Measurements of the DSSSD efficiency"

17:30 - 17:50: Victor Modamio Hoybjor, "Lifetime measurements of low-lying states in ^{63}Co and ^{65}Co "

17:50 - 18:10: Pete Mason, " ^7Li -Induced Reactions for Fast-Timing With LaBr₃: Ce Detectors"

18:10 - 18:30: Roman Slepnev, "Study of the structure of light nuclei far from the stability at FLNR"

18:30 - 18:50: Xavier Roca-Maza, "Dipole Polarizability and Parity Violating Asymmetry in ^{208}Pb "

Nuclear structure 10

- Camelia -

chair: Bogdan Farnal

16:30 - 16:50: Paolo Finelli, "Applications of In-Medium Chiral Dynamics to Nuclear Structure"

16:50 - 17:10: Jan Kvasil, "E1 vorticity and its manifestation in ^{124}Sn "

17:10 - 17:30: Dimitar Tonev, "Chirality in Nuclei"

17:30 - 17:50: Hitoshi Nakada, "Effects of Realistic Tensor Force on Nuclear Structure"

17:50 - 18:10: Razvan Lică, "Low-lying isomeric state in ^{80}Ga from the beta decay of ^{80}Zn "

18:10 - 18:30: Tamás Vertse, "Poles of the S-matrix in Woods-Saxon and Salamon-Vertse potentials"

18:30 - 18:50: Ernest Grodner, "DSA lifetime measurements of ^{124}Cs in the context of time-reversal symmetry"

Poster session: 20:30 - 23:00

5 Friday, July 13th

Nuclear structure 11

- Congress Hall -

chair: Hans Geissel

- 08:30 - 09:00: Shan-Gui Zhou, "Neutron halo in deformed nuclei from a deformed Relativistic Hartree-Bogoliubov theory in continuum"
- 09:00 - 09:30: Silvia Leoni, "Gamma spectroscopy of calcium nuclei around doubly magic ^{48}Ca using heavy-ion transfer reactions"
- 09:30 - 09:50: Toshio Suzuki, "Spin-dependent modes in nuclei and nuclear forces"
- 09:50 - 10:10: Peter Ring, "Covariant density functional theory with energy dependent self energies in nuclei"
- 10:10 - 10:30: Takashi Nakatsukasa, "Stochastic approach to correlations beyond the mean field with the Skyrme interaction"

Nuclear dynamics 4

- Congress Hall -

chair: Birger B. Back

- 11:00 - 11:30: Alberto M. Stefanini, "Fusion of calcium isotopes and of other medium-mass systems"
- 11:30 - 12:00: Alahari Navin, "Probing neutron pair transfer with Borromean isotopes of Helium"
- 12:00 - 12:20: Yoshihiro Aritomo, "Dynamical approach to heavy-ion induced fission using actinide target"
- 12:20 - 12:40: Wolfram von Oertzen, "Collinear cluster tri-partition: a new kind of radioactive decay of ^{252}Cf and ^{236}U "
- 12:40 - 13:00: Angela Bonaccorso, "Dynamical effects in proton breakup from exotic nuclei"

Nuclear structure 12

- Congress Hall -

chair: Jacek Dobaczewski

- 15:00 - 15:20: Julien Piot, "First observation of the ground-state based rotational band in ^{256}Rf at the border of the superheavy nuclei"
- 15:20 - 15:40: Michelangelo Sambataro, "Multipair approach to pairing in nuclei"
- 15:40 - 16:00: Yasuhiro Togano, "Hindered proton collectivity in the proton-rich nucleus ^{28}S : Possible magic number $Z=16$ "
- 16:00 - 16:20: Luciano Moretto, "Phase transitions and phase diagrams in hadronic and partonic systems"
- 16:20 - 16:40: Vaia Prassa, "Towards the island of stability with relativistic energy density functionals"

Nuclear structure 13

- Congress Hall -

chair: Gianluca Colò

17:10 - 17:30: Sonja Orrigo, "Beta Decay of Exotic fp-shell Nuclei with $T_z=-1$ and $T_z=-2$ at GANIL"

17:40 - 17:50: Michael Bowry, "Population of high-spin states following fragmentation"

17:50 - 18:10: Tomislav Marketin, "Role of momentum transfer in the quenching of Gamow-Teller strength"

Nuclear structure 14

- Camelia -

chair: Peter Reiter

15:00 - 15:20: Kosuke Nomura, "Interacting boson model from energy density functionals: gamma-softness and the related topics"

15:20 - 15:40: R. Burcu Cakirli, "Correlations in structure between masses and spectroscopic observables"

15:40 - 16:00: Mouna Bouhelal, "0 and 1 hbar omega Shell Model Description of the Phosphor Isotopes with $A=30$ to 35 "

16:00 - 16:20: Angelo Signoracci, "Spectroscopic factors and ESPE from renormalized interactions"

16:20 - 16:40: Wenchao Ma, "Identification of Triaxial Strongly Deformed Bands in ^{164}Hf "

Nuclear dynamics 5

- Camelia -

chair Thomas Aumann

17:10 - 17:30: Dharmendra Singh Singh, "Investigation of Incomplete Fusion Dynamics by Spin Distribution Measurement"

17:30 - 17:50: Emil Běták, "Heavy Ion Collisions and the Pre-Equilibrium Exciton Model"

17:50 - 18:10: Tea Mijatović, "Response function of the magnetic spectrometer Prisma for the multinucleon transfer reaction $^{40}\text{Ar}+^{208}\text{Pb}$ "

Closing Session

- Congress Hall -

18:10 - 18:40: Giacomo de Angelis