

PROGRAM

ZAKOPANE CONFERENCE ON NUCLEAR PHYSICS 2024

"Extremes of the Nuclear Landscape"
August 25th - September 1st, 2024
Zakopane, Poland

IT: Invited Talk, S: Seminar

Sunday, 25th of August

15:00 – 18:00	Registration	
18:00 – 19:00	Dinner	
19:00 – 19:10	Opening	
19:10 – 19:15	Tadeusz Lesiak IFJ PAN, Kraków	Director's Welcome Address

Special lecture

19:15 – 20:00	IT	Marek Lewitowicz GANIL, Caen	NuPECC Long Range Plan 2024
20:00	Welcome reception		

Monday, 26th of August

Nuclear Astrophysics
08:30 – 10:30
Convener Aurora Tumino

08:30 – 09:00	IT	Sara Palmerini INFN, Perugia	Old questions and new challenges in nuclear astrophysics
09:00 – 09:30	IT	Marco La Cognata INFN-LNS, Catania	Nuclear reactions for astrophysics and the opportunity of indirect methods
09:30 – 09:45	S	Maria Markova University of Oslo	Pygmy dipole resonance in Sn isotopes and its astrophysical impact
09:45 – 10:00	S	Jakub Skowroński University of Padova	New results on the proton capture on neon isotopes at LUNA
10:00 – 10:15	S	Amandeep Kaur University of Zagreb	Probing finite-temperature effects on electromagnetic dipole transitions
10:15 – 10:30	S	Michał Stepaniuk University of Warsaw	High-energy reactor antineutrinos deduced from total absorption spectroscopy measurements
10:30 – 11:00	Coffee Break		

Recent advances, applications, and ab initio derivations of nuclear DFT
11:00 – 13:00
Convener Jacek Dobaczewski

11:00 – 11:30	IT	Lars Zurek CEA, DAM, DIF	Towards nuclear energy density functionals from first principles
11:30 – 12:00	IT	Karim Bennaceur University of Lyon, IP2I	Mean-field calculations with regularized pseudopotentials
12:00 – 12:30	IT	Marek Płoszajczak GANIL, Caen	Clustering in atomic nuclei
12:30 – 12:45	S	Xuwei Sun University of York	Iterative solutions of the ATDHFB equations to determine the nuclear collective inertia
12:45 – 13:00	S	Yannen Jaganathen National Centre for Nuclear Research, Warsaw	Demystifying the fusion mechanism in heavy ion collisions within six-dimensional Langevin dissipative dynamics
13:00 – 14:00	Lunch		
14:00 – 18:00	Hiking trip		
18:00 – 19:00	Dinner		

Recent advances, applications, and ab initio derivations of nuclear DFT

19:00 – 21:00

Convener Jacek Dobaczewski

19:00 – 19:30	IT	Herlik Wibowo University of York	Electromagnetic moments within nuclear DFT
19:30 – 20:00	IT	Michael Bender University of Lyon, IP2I	Multi-reference description of nuclear states
20:00 – 20:30	IT	Gianluca Colo INFN and University of Milano	Nuclear DFT: applications to single-particle and collective states and some open questions
20:30 – 20:45	S	Betania Backes University of York	Accelerating nuclear DFT algorithms for finite-range interactions
20:45 – 21:00	S	Petr Veselý Nuclear Physics Institute, Czech Academy of Sciences	Multi-particle-hole configurations in description of double beta decay

Theory for experiment

21:00 – 21:20	IT	Manuela Rodríguez-Gallardo University of Sevilla	Theo4Exp: a theory service for EURO-LABS community
---------------	----	--	--

Tuesday, 27th of August

Nuclear fission
08:30 – 10:30
Convener Jonathan Wilson

08:30 – 09:00	IT	Christelle Schmitt IPHC, Strasbourg and IFJ PAN, Kraków	New insights into fission from recent experiments. What drives fission across the nuclear chart?
09:00 – 09:30	IT	Jorgen Randrup Lawrence Berkeley National Laboratory	Generation of angular momentum in fission fragments
09:30 – 10:00	IT	Dorthea Gjestvang University of Oslo	Does neutron emission change the fission fragment angular momentum?
10:00 – 10:15	S	Gilbert Bélier CEA, DAM, DIF	Neutron and γ -ray emission in fast neutron induced fission
10:15 – 10:30	S	Alex Cobo GANIL, Caen	Isotopic fission fragments distributions in the Thorium region produced in inverse-kinematics with a ^{232}Th beam
10:30 – 11:00	Coffee Break		

Nuclear fission
11:00 – 13:00
Convener Jonathan Wilson

11:00 – 11:30	IT	Laurent Gaudefroy CEA, DAM, DIF	Deformation, angular momentum and excitation energy of fission fragments in the neutronless fission of $^{252}\text{Cf}(sf)$
11:30 – 12:00	IT	David Regnier CEA, DAM, DIF	Probing the fluctuation of fission observables
12:00 – 12:15	IT	Jianwei Zhao GSI, Darmstadt	Fission isomer studies at FRS and IGISOL
12:15 – 12:30	IT	Bogusław Włoch University of Bordeaux, LP2I	Surrogate reactions at heavy-ion storage ring
12:30 – 12:45	S	Indu Jangid GANIL, Caen	Fission dynamics investigation using VAMOS and FALSTAFF spectrometers
12:45 – 13:00	S	Neeraj Kumar IPHC, Strasbourg	Efficient procedure for extracting isotopic (A, Z) fission yields with the VAMOS++ spectrometer
13:00 – 14:00	Lunch		

Parallel Sesion A
15:30 – 17:45
Chairman Kamila Sieja

15:30 – 15:45	S	Benito Gongora-Servin INFN – LNL, Legnaro	Searching for the anomalous internal pair creation in ^8Be
15:45 – 16:00	S	Nandor Sas HUN-REN Atomki	Electron-positron pair spectrometers with high efficiency for angular correlation measurements
16:00 – 16:15	S	Miguel Lozano-Gonzalez IGFAE and Univerity of Santiago de Compostela	Proton and neutron pick-up reactions with Be isotopes near the drip-line
16:15 – 16:30	S	Quentin Delignac University of Bordeaux, LP2IB	Study of proton and neutron excitations along silicon isotopes between N=20 and N=28
16:30 – 16:45	S	Bhoomika Maheshwari GANIL, Caen	O_2^+ shape isomer in ^{44}S
16:45 – 17:00	S	Marcell Begala HUN-REN Atomki	Gamma-ray spectroscopy of ^{46}S and ^{47}S
17:00 – 17:15	S	Massimiliano Luciani University of Milan	Searching for the microscopic origin of shape coexistence in Ca isotopes
17:15 – 17:30	S	Hemantika Sengar GANIL, Caen	Exploring nuclear structures with fast neutrons at NFS
17:30 – 17:45	S	Konstantin Stoychev University of Guelph	Magnetic moments of isomeric states around ^{68}Ni
18:00 – 19:00	Dinner		

Parallel Sesion B
15:30 – 17:45
Chairman Paul Garrett

15:30 – 15:45	S	Irene Dedes IFJ PAN, Kraków	New exotic geometrical shape predictions in the range of nuclei with $Z \approx N \sim 40$
15:45 – 16:00	S	Yuliia Hrabar University of Lund	Deuteron evaporation and proton emission in the upper fp shell
16:00 – 16:15	S	Konstantin Mashtakov University of Guelph	Beta-decay study of the shape coexistence in ^{98}Zr
16:15 – 16:30	S	Johannes Sørby Heines University of Oslo	New lifetime measurements in the Ru chain: investigating the evolution of triaxiality
16:30 – 16:45	S	Bram van den Borne KU Leuven	Probing nuclear structure changes in odd-odd nuclei below $Z = 50$ with Ag
16:45 – 17:00	S	Andrea Horvat Ruder Boskovic Institute	Constraints on the symmetry energy from relativistic Coulomb excitation
17:00 – 17:15	S	Adam McCarter University of Liverpool	The study of proton-emitting nuclei near the $N=82$ shell closure
17:15 – 17:30	S	Polytimos Vasileiou National & Kapodistrian University of Athens	Investigating quadrupole bands in even-even Hf and W
17:30 – 17:45	S	Gee Bartram University of Surrey	Isomeric and beta decay transitions and lifetimes in the neutron-rich $N=126$ region
18:00 – 19:00	Dinner		

POSTER SESSION
19:00 – 21:30

Wednesday, 28th of August

Various facets of shape coexistence

08:30 – 10:30

Convener Silvia Leoni

08:30 – 09:00	IT	Takaharu Otsuka RIKEN and University of Tokyo	Prevailing triaxial shapes in atomic nuclei and a quantum theory of rotation of composite objects
09:00 – 09:30	IT	Paul Garrett University of Guelph	Shape transitions and coexistence in the Sr - Ru isotopes
09:30 – 10:00	IT	Jonathan Wilson IJCLab, Orsay	High-resolution studies of the back decay of fission shape isomers
10:00 – 10:15	S	Cristian Costache IFIN-HH, Magurele	Investigating the shape coexistence phenomena in ⁶² Ni
10:15 – 10:30	S	Desislava Kalaydjieva University of Guelph	β decay of ¹⁰⁰ Y studied with GRIFFIN
10:30 – 11:00	Coffee Break		

Various facets of shape coexistence

11:00 – 13:00

Convener Silvia Leoni

11:00 – 11:30	IT	Javier Menendez University of Barcelona	²⁸ Si: spherical, oblate, prolate and superdeformed states?
11:30 – 12:00	IT	Franco Galtarossa INFN, Padova	Shape coexistence probed via transfer reactions with AGATA at LNL
12:00 – 12:30	IT	Katarzyna Wrzosek-Lipska HIL UW, Warsaw	Shape coexistence in Cd isotopes studied with safe and un-safe Coulomb excitation
12:30 – 12:45	S	Iwona Piętka HIL UW, Warsaw	Coulomb excitation of ¹¹⁰ Cd studied with AGATA at LNL
12:45 – 13:00	S	Giacomo Corbari University of Milano and INFN	Study of shape coexistence in Sn isotopes around A=110
13:00 – 14:00	Lunch		

Afternoon Session
15:30 – 18:00
Chairman Christoph Scheidenberger

15:30 – 16:00	IT	Krzysztof Rykaczewski Oak Ridge National Laboratory	Towards solving the nuclear reactor antineutrinos puzzle
16:00 – 16:25	IT	Faiçal Azaïez LNL-INFN, Legnaro-Padova	The status and future plans of the SPES project
16:25 – 16:50	IT	Kevin Insik Hahn Center for Exotic Nuclear Studies, Institute for Basic Science, Daejeon	Research activities at CENS
16:50 – 17:05	S	Karl Hauschild IJCLab, Orsay	The SHEXI concept: superheavy element x-ray identification
17:05 – 17:20	S	Istvan Kuti HUN-REN Atomki	DIAMANT at HIL — the NEEDI setup
17:20 – 17:35	S	Pavol Mosat GSI, Darmstadt	Spectroscopy of superheavy nuclei with ANSWERS at TASCA
17:35 – 17:50	S	Andrea Raggio University of Jyväskylä,	Collinear laser spectroscopy of U isotopes at IGISOL
17:50 – 18:00	BEST POSTERS AWARDS		
18:00 – 19:00	Dinner		

Evening Session
19:00 – 21:30
Chairman Krzysztof Rusek

19:00 – 19:15	S	Adam Kozela IFJ PAN, Kraków	Search for beyond standard model physics at the ESS in Lund
19:15 – 19:30	S	Hervé Savajols GANIL, Caen	Search for a neutron dark decay in ${}^6\text{He}$
19:30 – 19:45	S	Eugene Oks Auburn University	Shedding light on neutron lifetime puzzle via the new unexpected result of the two-body decay of neutrons
19:45 – 20:00	S	Rehab Yajzey Jazan University	Isospin symmetry breaking studied with nucleon knockout reactions
20:00 – 20:15	S	Amiram Leviatan The Hebrew University	Persistent vibrational structure and symmetry in ${}^{110-116}\text{Cd}$
20:15 – 20:30	S	Joakim Cederkall University of Lund	The quadrupole moment of the first 2^+ state and the $B(E2)$ value of the 4^+ to 2^+ transition in ${}^{110}\text{Sn}$ from safe Coulomb excitation
20:30 – 20:45	S	Heinrich Wilsenach Tel Aviv University	Measurement of double alpha decay of ${}^{224}\text{Ra}$ at the FRS Ion Catcher
20:45 – 21:00	S	Piotr Jachimowicz University of Zielona Góra	Candidates for three-quasiparticle high-K isomers in even-odd Fm-Ds nuclei
21:00 – 21:15	S	Jessica Warbinek GSI/CERN	Probing the N=152 neutron shell gap by laser spectroscopy of fermium isotopes

Thursday, 29th of August

08:30 – 11:10
Chairman Krzysztof Rykaczewski

Superheavy nuclei overview

08:30 – 09:10	IT	Dieter Ackermann GANIL, Caen	Quo vadis SHE? Where do we go? - Where can we go?
---------------	----	--	--

Structure of exotic nuclei
09:10 – 11:10
Convener Alexandra Gade

09:10 – 09:40	IT	Anna McCoy Argonne National Laboratory	Collectivity from first principles
09:40 – 10:10	IT	Remco Zegers Michigan State University	Advances in charge-exchange reactions with rare isotope beams
10:10 – 10:40	IT	Vladimir Manea IJCLab, Orsay	News on masses of rare isotopes
10:40 – 10:55	S	Christoph Fransen University of Cologne	The recoil distance Doppler-shift technique: a valuable method for nuclear structure studies far from the valley of stability
10:55 – 11:10	S	Michael Bentley University of York	B(E2) measurements of heavy N = Z nuclei at FRIB
11:10 – 11:40	Coffee Break		
11:40 – 19:00	Excursion		
19:00 – 22:00	Regional Dinner		

Friday, 30th of August

Collective properties of atomic nuclei

08:30 – 10:30

Convener Adam Maj

08:30 – 09:00	IT	Angela Bracco INFN and University of Milan	Nuclear structure at finite temperature and the electric dipole oscillations: overview and open problems
09:00 – 09:30	IT	Peter von Neumann-Cosel FAIR/GSI, Darmstadt	Evidence for a toroidal electric dipole mode in nuclei
09:30 – 10:00	IT	Nils Paar University of Zagreb	Properties of pygmy dipole strength from theoretical perspective
10:00 – 10:15	S	Kamila Sieja IPHC, Strasbourg	Electric dipole response of light nuclei within the CI-SM approach
10:15 – 10:30	S	Frantisek Knapp Charles University, Prague	Recent studies of nuclear collective excitations within the equation of motion phonon method
10:30 – 11:00	Coffee Break		

Collective properties of atomic nuclei

11:00 – 13:00

Convener Adam Maj

11:00 – 11:30	IT	Andreas Zilges University of Cologne	Pygmy or not Pygmy – an experimentalist's point of view
11:30 – 12:00	IT	Mark Spieker Florida State University	Accessing the single-particle structure of the PDR
12:00 – 12:30	IT	Oliver Wieland INFN, Milan	Extra yield below the Giant Dipole Resonance under extreme conditions
12:30 – 12:45	S	Agnese Giaz INFN and University of Milan	Search for PDR and ISGQR in $A \simeq 60$ and $A = 120$ mass regions
12:45 – 13:00	S	Périne Miriot-Jaubert CEA, IRFU, DPhN, Orsay	Study of the Pygmy Dipole Resonance using neutron inelastic scattering at GANIL-SPIRAL2/NFS
13:00 – 14:00	Lunch		
14:00 – 18:00	Hiking trip		
18:00 – 19:00	Dinner		

Collective properties of atomic nuclei

19:00 – 21:30

Convener Adam Maj

19:00 – 19:25	IT	Par Anders Söderström ELI-NP, IFIN-HH, Magurele	Gamma above the neutron threshold perspectives at ELI-NP
19:25 – 19:50	IT	Antoni Szczurek IFJ PAN, Kraków	Light-by-light scattering in ultraperipheral heavy ion collisions - new possibilities
19:50 – 20:15	IT	Hiroyuki Sagawa RIKEN, and University of Aizu	Effects of beyond mean field approximation and tensor forces on Gamow-Teller and β decay of magic nuclei
20:15 – 20:30	S	Lauren Bell University of Oslo	Nuclear level densities and γ -ray strength functions of $^{152,154}\text{Sm}$
20:30 – 20:45	S	Adrian Sanchez Fernandez University of York	Two-center harmonic oscillator basis: alpha clustering and symmetric fission as Proof-of-Principle calculations
20:45 – 21:00	S	Janusz Skalski National Centre for Nuclear Research, Warsaw	Selfconsistent study of ternary fission of (super)heavy nuclei
21:00 – 21:30	IT	Paweł Napiorkowski HIL UW, Warsaw	30 years of ion beams from the Warsaw Cyclotron - a good beginning

Saturday, 31st of August

High Spin States 08:30 – 11:00 Convener Piotr Bednarczyk

08:30 – 09:00	IT	Mark Riley Florida State University	Physics opportunities at ultra-high spin
09:00 – 09:30	IT	Bo Cederwall KTH Royal Institute of Technology	The complex interplay between pairing modes and spin in deformed $N \approx Z$ nuclei
09:30 – 10:00	IT	Costel Petrache IJCLab, University Paris-Saclay and CNRS-IN2P3	Different manifestations of oblate rotation in nuclei
10:00 – 10:30	IT	Katarzyna Hadyńska-Klęk HIL UW, Warsaw	Probing nuclear deformation in the vicinity of ^{40}Ca and ^{56}Ni
10:30 – 10:45	S	Irene Zanon KTH Royal Institute of Technology	Anomalous $B_{4/2}$ ratio in the yrast band of ^{167}Os
10:45 – 11:00	S	Attila Krakó HUN-REN Atomki	Multiple chiral doublet bands in ^{104}Rh
11:00 – 11:30	Coffee Break		

11:30 – 13:00 Chairman Bogdan Fornal

11:30 – 11:55	IT	Piotr Salabura Jagiellonian University of Cracow	Poland in FAIR
---------------	----	---	----------------

Special lecture

11:55 – 12:40	IT	Thomas Elias Cocolios KU Leuven	From uNclear to Nuclear. How nuclear science contributes to our society
12:40 – 13:00	Conference Closing		
13:00 – 14:00	Lunch		
14:00 – 18:00	Hiking trip		
19:00	Conference BANQUET		

Sunday, 1st of September

Bus departure to Kraków