

Carpathian Summer School of Physics 2018
Exotic Nuclei and Nuclear/Particle Astrophysics (VII). Physics with small accelerators
July 1st - 14th, 2018, Sinaia, Romania
Program

Monday, July 2nd, 2018		<i>Introductory lectures</i>
Morning Session: Opening		
<i>Chair: L. Trache</i>		
09:00 - 09:15	L. Trache, M. Radu: <i>Opening Session</i>	
09:15 - 09:55	Timo Sajavaara: <i>Ion beam analysis using small accelerators - University of Jyväskylä</i>	
09:55 - 10:50	Timo Sajavaara: <i>Ion beam analysis using small accelerators II - University of Jyväskylä</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	Moshe Gai: <i>Nuclear Astrophysics: An Overview - University of Connecticut</i>	
12:00 - 12:50	Mihai Radu: <i>Small accelerators – applications in life sciences - IFIN-HH</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Introductory lectures II</i>
<i>Chair: C. Mihai</i>		
15:00 - 15:50	Moshe Gai: <i>Nuclear Astrophysics: Applications - University of Connecticut</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	Philip Woods: <i>Nuclear Astrophysical reactions studied with radioactive beams - University of Edinburgh</i>	
17:05 - 18:00	Claudia Lederer-Woods: <i>Neutron induced reactions in Astrophysics - University of Edinburgh</i>	

Tuesday, July 3rd, 2018		AMS (I)
Morning Session		
<i>Chair: T. Sava</i>		
09:00 - 09:55	<u>Timothy Jull</u> : <i>Basics of Radiocarbon Dating using Accelerators - University of Arizona and Institute of Nuclear Research, Debrecen</i>	
09:55 - 10:50	<u>Walter Kutschera</u> : <i>Why did Alpine glaciers move backward and forward throughout the last 10,000 years, without human impact? - University of Vienna</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Jose Gutierrez</u> : <i>Accelerator Mass Spectrometry of heavy radionuclides at CNA - University of Sevilla</i>	
12:00 - 12:50	<u>Nona Palincas</u> : <i>Archaeometry and individual biographies: Evidence from radiocarbon dating and stable isotope analyses for diet reconstruction from the 14th – 17th century cemetery at Băraști (Southern Romania) - Vasile Prvan Institute of Archaeology</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		Physics with small accelerators
<i>Chair: T. Sajavaara</i>		
15:00 - 15:50	<u>Gabor Kiss</u> : <i>Alpha nucleus optical potentials for modelling explosive nucleosynthesis scenarios - MTA ATOMKI, Debrecen</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	<u>Magda Nistor</u> : <i>Rutherford Backscattering Spectrometry – a well-suited analysis method for oxide thin films - National Institute for Lasers, Plasmas and Radiation Physics (NILPRP)</i>	
17:05 - 18:00	<u>Vasile Opris</u> : <i>Archaeometric methods applied on Boian culture pottery at IFIN-HH - Bucharest Municipality Museum</i>	
18:00 - 18:55	Communications	
	<u>Dragos Mirea</u> : <i>Characteristic X-rays used for archaeometry - IFIN-HH</i>	
	<u>Corina Simion</u> : <i>Radiocarbon dating of mortar based on hydraulic lime. Advantages, disadvantages, limitations. The medieval fortress Marienburg in Feldioara - IFIN-HH</i>	
	<u>Oana Gaza</u> : <i>Radiocarbon dating of individual aminoacids - IFIN-HH</i>	

Wednesday, July 4th, 2018		<i>Exotic nuclei</i>
Morning Session		
<i>Chair: V. Iacob</i>		
09:00 - 09:55	<u>Doru Sabin Delion</u> : <i>Alpha clustering in strong electromagnetic fields - IFIN-HH</i>	
09:55 - 10:50	<u>Virgil Baran</u> : <i>Core excitations in Pigmy dipole resonances - University of Bucharest</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Constantin Mihai</u> : <i>Nuclear structure studies with the ROSPHERE array - IFIN-HH</i>	
12:00 - 12:25	<u>Gabriel Tabacaru</u> : <i>Cyclotron Institute Texas A&M University - an overview of the facility – TAMU Cyclotron Institute</i>	
12:25 - 12:50	<u>Alexandru Dumitrescu</u> : <i>Theoretical investigation of alpha-like quasimolecules in heavy nuclei - IFIN-HH</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Instrumentation</i>
<i>Chair: M. Straticiuc</i>		
15:00 - 15:50	<u>Emanuel Pollacco</u> : <i>Towards building instruments for Nuclear Physics Today - IRFU/DPhN CEA Saclay</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	<u>George Pascovici</u> : <i>Development of FEE for Scintillator-SiPM assemblies and state of the art of modern commercial digitizers for nuclear physics experiments - IFIN-HH</i>	
17:05 - 18:00	<u>Ion Burducea</u> : <i>Applications at the 3 MV Tandatron from IFIN-HH - IFIN-HH</i>	
18:00 - 18:55	<i>Communications</i>	
	<u>Iuliana Stanciu</u> : <i>Rare Earth Element patterns used as indicators for environmental redox Conditions - Technical University of Munich</i>	
	<u>Daniel Stoicescu</u> : <i>Proton inelastic scattering in ⁵⁷Fe - Faculty of Physics, University of Bucharest</i>	

Thursday, July 5th, 2018		<i>ELI-NP session</i>
Morning Session		
<i>Chair: O. Tesileanu</i>		
09:00 - 09:55	<u>Dan Ghita</u> : <i>The ELI-NP facility and status of implementation –</i> <i>ELI-NP</i>	
09:55 - 10:50	<u>Klaus Spohr</u> : <i>Nuclear Physics with high power lasers –</i> <i>ELI-NP</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Julien Fuchs</u> : <i>High-power laser pulses and strong magnetization as tools for investigating astrophysical phenomena -</i> <i>ELI-NP</i>	
12:00 - 12:50	<u>Calin Ur</u> : <i>Nuclear Photonics with Gamma Beams (I) –</i> <i>ELI-NP</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		
<i>Chair: D. Ghita</i>		
15:00 - 15:50	<u>Calin Ur</u> : <i>Nuclear Photonics with Gamma Beams (II) –</i> <i>ELI-NP</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 16:35	<u>Petru Ghenuche</u> : <i>Medical isotope production with lasers –</i> <i>ELI-NP</i>	
16:35 - 17:00	<u>Mihail Cernaianu</u> : <i>Plasma mirrors for high power laser experiments –</i> <i>ELI-NP/IFIN-HH</i>	
17:05 - 17:30	<u>Danilo Gambacurta</u> : <i>Microscopic description of the GDR & PDR modes –</i> <i>ELI-NP</i>	
17:30 - 18:00	<u>Deepika Choudhury</u> : <i>Recent results from prompt fission gamma-ray measurements –</i> <i>ELI-NP</i>	

Friday, July 6th, 2016		<i>ELI-NP session</i>
Morning Session		
<i>Chair: C. A. Ur</i>		
09:00 - 09:55	<u>Stefan Ataman</u> : <i>Vacuum birefringence: from theory to experiments (I) – ELI-NP</i>	
09:55 - 10:50	<u>Andrei Berceanu</u> : <i>Plasma Physics through Computer Simulations: the particle-in-cell method – ELI-NP</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Stefan Ataman</u> : <i>Vacuum birefringence: from theory to experiments (II) – ELI-NP</i>	
12:00 - 12:50	<u>Vivian Dimitriou</u> : <i>Photodissociation experiments with brilliant gamma beams at ELI-NP - IAEA</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		
<i>Chair: J. Fuchs</i>		
15:00 - 15:50	<u>Domenico Doria</u> : <i>Laser acceleration of ions – ELI-NP</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 16:35	<u>Florin Rotaru</u> : <i>Nuclear Diagnostics for High Power Laser Experiments at ELI-NP – ELI-NP</i>	
16:35 - 17:00	<u>Marian Zamfirescu</u> : <i>CETAL laser facility experimental capabilities – CETAL</i>	
17:05 - 17:30	<u>Dan Stutman</u> : <i>Nuclear Physics with helical phase beams – ELI-NP</i>	
17:30 - 18:00	<u>Mateusz Krzysiek</u> : <i>Photoneutron measurements in the GDR region – ELI-NP</i>	

Saturday, July 7th, 2018		<i>Outreach day</i>
Morning Session		
<i>Chair:</i>		
09:55 - 10:50	<u>Walter Kutschera</u> : <i>The life and science of Marie Curie and Lise Meitner - two icons of radioactivity - University of Vienna</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Romul Margineanu</u> : <i>Radon measurements in underground - IFIN-HH</i>	
12:00 - 12:50	<u>Alina Badescu</u> : <i>Radio detection of cosmic particles - Politehnic University, Bucharest</i>	
12:50 – 14:30	<i>Lunch</i>	
14:30 Round table: “How one prepares the next generation of scientists in the age of instant communication”		
<i>Moderator: L. Trache</i>		
14:30 - 15:50	Tohru Motobayashi, Alan Wuosmaa	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:00	Jordi Jose,	
19:00	Banquet	

Monday, July 9th, 2018		<i>Nuclear Astrophysics (I)</i>
Morning Session		
<i>Chair: A. Coc</i>		
09:00 - 09:55	<u>Jordi Jose</u> : <i>Nucleosynthesis in Stellar Explosions: Novae, X-Ray Bursts and Type Ia Supernovae - UPC Barcelona</i>	
09:55 - 10:50	<u>Karl Ludwig Kratz</u> : <i>Production of light trans-Fe elements in ccSNe - Max-Planck-Institute for Chemistry</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Aldo Bonasera</u> : <i>Nuclear (Astro) Physics Using Lasers - TAMU Cyclotron Institute</i>	
12:00 - 12:50	<u>Brian Fields</u> : <i>A Nuclear Astrophysics Guide to Cosmology - University of Illinois</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Nuclear Astrophysics (II)</i>
<i>Chair: K. L. Kratz</i>		
15:00 - 15:50	<u>Adriana Raduta</u> : <i>Cooling of hyperneutron stars - IFIN-HH</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	<u>Roland Diehl</u> : <i>Gamma-ray lines from cosmic nuclei - MPE Garching</i>	
17:05 - 18:00	<u>Brad Meyer</u> : <i>Deciding When an Astrophysical Nuclear Reaction Rate is Important to Measure - Clemson University</i>	

Tuesday, July 10th, 2018		<i>Nuclear Reactions</i>
Morning Session		
<i>Chair: A. Petrovici</i>		
09:00 - 09:55	<u>Carlos Bertulani</u> : <i>Primordial abundances of ^7Li and ^6Li</i> - Texas A&M University-Commerce	
09:55 - 10:50	<u>Alan Wuosmaa</u> : <i>New techniques for transfer reactions with exotic beams</i> - University of Connecticut	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	<u>Tohru Motobayashi</u> : <i>What we learn for astrophysics from studies with fast RI beams</i> - RIKEN-Japan	
12:00 - 12:50	<u>Takahiro Kawabata</u> : <i>Nuclear experimental approach towards the nucleosynthesis in the universe</i> - Osaka University	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Nuclear Astrophysics (III)</i>
<i>Chair: C. Bertulani</i>		
15:00 - 15:50	<u>Alexandrina Petrovici</u> : <i>Exotic phenomena in medium mass $N \approx Z$ nuclei: a comprehensive understanding</i> - IFIN-HH	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	<u>Catalin Borcea</u> : <i>Total reaction cross sections at the IFIN-HH Tandem</i> - IFIN-HH	
17:05 - 18:00	<u>Mihai Petrovici</u> : <i>Geometrical scaling from RHIC to LHC energies</i> - IFIN-HH	
18:00 - 19:00	<i>Communications</i> <u>Kanji Mori</u> : <i>Quantum Mechanical Constraints on Resonances in Carbon Fusion Reaction and Its Impact on Type Ia Supernovae</i> - National Astronomical Observatory of Japan <u>Heshani Jayatissa</u> : <i>Constraining the $^{22}\text{Ne}(\alpha, n)$ reaction rate via the $^{22}\text{Ne}(^6\text{Li}, d)^{26}\text{Mg}$ alpha-transfer reaction at sub-Coulomb energies</i> - TAMU Cyclotron Institute <u>Teodora Andreea Petruse</u> : <i>Preliminary results on the $^{19}\text{F}(p, \alpha)^{16}\text{O}$ reaction studied via the Trojan Horse Method</i> - IFIN-HH	

Wednesday, July 11th, 2018		<i>Nuclear Astrophysics (IV)</i>
Morning Session		
<i>Chair: Ad. Raduta</i>		
09:00 - 09:55	Alain Coc: <i>Primordial nucleosynthesis - CSNMS (CNRS) Orsay</i>	
09:55 - 10:50	Brian Fields: <i>When Stars Attack! Geological and Lunar ^{60}Fe Reveals Near Earth Supernovae - University of Illinois</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	Mounib El Eid: <i>Magnetic Effects in Stellar Plasma - American University of Beirut</i>	
12:00 - 12:50	Claudio Spitaleri?	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Astroparticles</i>
<i>Chair: B. Fields</i>		
15:00 - 15:50	<u>Irina Mocioiu</u> : <i>Learning about Particle Physics and Astrophysics with Neutrinos - Pennsylvania State University</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:05	<u>Alexandra Saftoiu</u> : <i>Overview of the Pierre Auger Observatory - IFIN-HH</i>	
17:05 - 18:05	<i>Communications</i>	
	<u>Bogdan Mitrica</u> : <i>Muography - present and future - IFIN-HH</i>	
	<u>Sema Küçükücü</u> : <i>Simulations for NEDA - ERASMUS, Politehnic University of Bucharest</i>	
	<u>Cristina Bordeanu</u> : <i>What is time? - IFIN-HH</i>	

Thursday, July 12th, 2018		<i>Nuclear Astrophysics (V)</i>
Morning Session		
<i>Chair: M. Avrigeanu</i>		
09:00 - 09:55	Carolyn Doherty: <i>Contribution of low and intermediate star yields to the chemical evolution of the Galaxy - Konkoly Observatory</i>	
09:55 - 10:50	Antonio Caciolli: <i>Nuclear Astrophysics in underground laboratories: the LUNA experiment - University of Padova</i>	
10:50 - 11:10	<i>Coffee break</i>	
11:10 - 12:00	Mihaly Molnar: <i>EnvironMICADAS: dedicated compact AMS for Environmental Physics - MTA ATOMKI, Debrecen</i>	
12:00 - 12:50	Julien Fuchs: <i>GENERating extreme NEutrons for investigating controlled r- process nucleosynthesis - ELI-NP</i>	
13:00 - 15:00	<i>Lunch</i>	
Afternoon Session		<i>Nuclear Astrophysics (VI)</i>
<i>Chair: M. El Eid</i>		
15:00 - 15:50	Meng Wang: <i>Nuclear mass measurements - Chinese Academy of Sciences</i>	
15:50 - 16:10	<i>Coffee break</i>	
16:10 - 17:00	<i>Communications</i>	
	<u>Sophia Chen</u> : <i>Ion-plasma interactions in the laboratory in order to investigate astrophysical relevant phenomena - ELI-NP</i>	
	<u>Amira Guediche</u> : <i>Laboratory investigation of collision-less ion-plasma energy exchange - Ecole Polytechnique - CNRS LULI</i>	
17:00 - 18:00	<i>Communications</i>	
	<u>Tahani Makki</u> : <i>The Cosmological Lithium Problem : New Analysis of the Standard Big Bang Nucleosynthesis (SBBN) - American University of Beirut (AUB)</i>	
	<u>Madalina Ravar</u> : <i>ChETEC COST Action Training School @ IFIN-HH - IFIN-HH and University of Bucharest</i>	
	<u>Alexandra Chilug</u> : <i>Study of the ⁹C breakup through NP1412-SAMURAI29R1 experiment - IFIN-HH</i>	

Friday, July 13th, 2018	
Morning Session	
<i>Chair: L. Trache</i>	
09:00 - 09:55	Marilena Avrighianu : <i>Consistent assesment of deuteron interactions at low and medium energies - IFIN-HH</i>
09:55 - 10:50	Vlad Avrighianu : <i>Actual questions on the alpha-particle optical potential at low energies - IFIN-HH</i>
10:50 - 11:10	<i>Coffee break</i>
11:10 - 12:00	Victor Iacob: <i>Precise half-life measurement of the superallowed beta emitter S-30 - TAMU Cyclotron Institute</i>
12:00 - 13:00	<i>Communications</i> <u>Alexandra Spiridon</u> : <i>Elastic studies with the upgraded Oxford-MDM detector - IFIN-HH</i> <u>Dana Tudor</u> : <i>Experimental study of alpha on 64Zn - IFIN-HH</i> <u>Ionut Stefanescu</u> : <i>AstroBox2E: A detection system for very low energy beta-delayed proton decay - IFIN-HH</i>
13:00 - 15:00	<i>Lunch</i>
Afternoon Session	
<i>Chair: L. Trache</i>	
15:00 - 15:50	<i>Closing</i>

Saturday, July 14th, 2018	
09:00	<i>Departures</i>