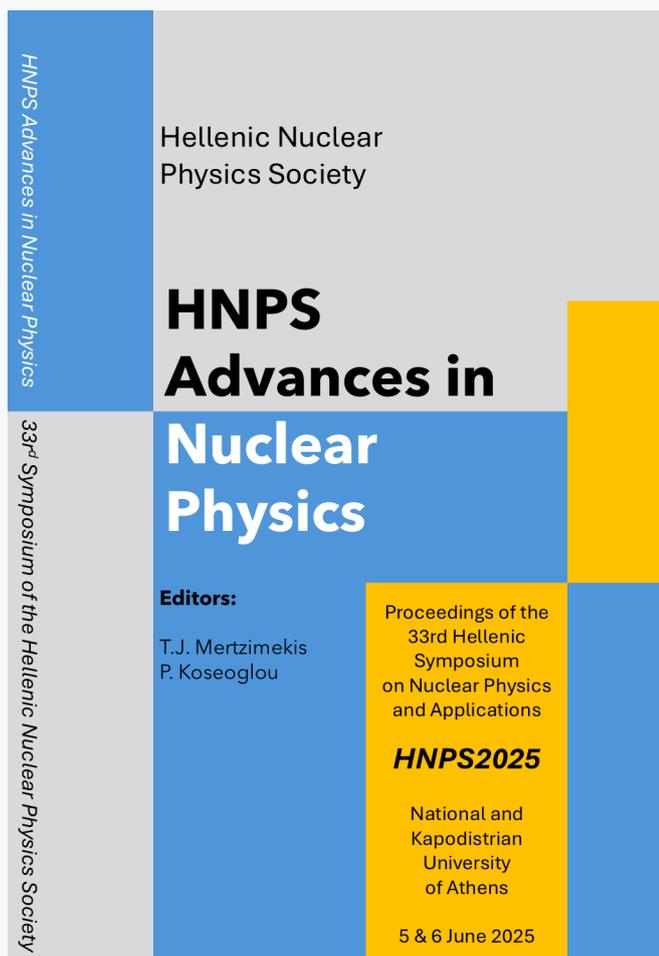


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### HNPS2025 Editorial

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HNPS25

33<sup>rd</sup> Annual Symposium of the Hellenic Nuclear Physics Society

6 and 7 June 2025

National and Kapodistrian University of Athens

# Program

# HNPS2025

ANNUAL SYMPOSIUM OF THE HELLENIC NUCLEAR PHYSICS SOCIETY

6 AND 7 JUNE 2025

**Department of Physics, Zografou Campus, Athens, Greece**



**HELLENIC REPUBLIC**

**National and Kapodistrian  
University of Athens**

**Local Organizing Committee**

Theo J. Mertzimekis • Pavlos Koseoglou • Polytimos Vasileiou • Margarita Efstathiou

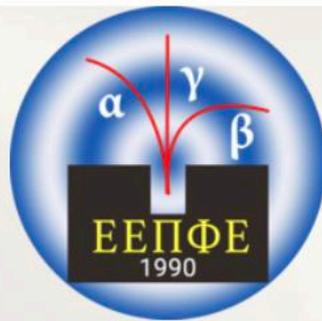
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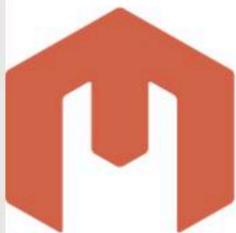
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HELLENIC REPUBLIC  
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**PROGRAM**

# Program of the 33<sup>rd</sup> Annual Symposium of the Hellenic Nuclear Physics Society

**Friday 06/06/2025**

**8:30 Registration**

**9:00 Welcome Addresses**

**Session 1** *Chair: Ch. C. Moustakidis*

**9:30** D. Bonatsos - Triaxial Shapes in Atomic Nuclei

**9:50** P. Vasileiou - Exploring Triaxial Deformation in Ground and  $\gamma$  Bands of Even-Even Er Isotopes

**10:10** K. E. Karakatsanis - Shape transitions and collective behaviour of Er and Yb isotopes based on relativistic energy density functional theory

**10:30** V. Prassa - A Bayesian Network-Based Framework for Predicting Fission Charge Yields

**10:50 Coffee break**

**Session 2** *Chair: M. Kokkoris*

**11:10** V. Michalopoulou - Study of the  $^{235}\text{U}(n,f)$  reaction in the energy region 1 to 100 eV

**11:30** N. Kyritsis - Measurement of the  $^{243}\text{Am}(n,f)$  reaction cross-section at the n\_TOF facility at CERN

**11:50** A. Skouloudaki - Cumulative Yield measurements from  $^{235}\text{U}(n_{th},f)$  with the FIPPS detector

**12:10** Z. Bari - Cross Section Measurements of Neutron Induced Reactions on Mo Isotopes

**12:30** K. Kaperoni - Diamond Detector Development for Neutron Measurements in Harsh Environmental Conditions

**Poster session**

**12:50 Light lunch and Poster session**

**Session 3** *Chair: D. Bonatsos*

**14:50** Ch. C. Moustakidis - Implications of Kaon Condensation in Dense Nuclear Matter for Recent Light Compact Star Observations

**15:10** P. S. Koliogiannis - Nuclear Signatures and Stellar Observables: Bridging Terrestrial Experiments and Neutron Star Structure

**15:30** A. Kanakis-Pegios - Investigating isovector properties of finite nuclei through neutron stars

**15:50** D. Papoulias - Inelastic neutrino-nucleus scattering using a hybrid nuclear model

**16:10 Coffee break**

**Session 4** *Chair: A. Ioannidou*

**16:30** M. Kokkoris - Study of Fundamental Channeling Parameters in a Diamond Crystal Using Deuterons and Combining the EBS and NRA Ion Beam Analysis Techniques

**16:50** A. Kanellakopoulos - GAMMA-MRI: A Molecular Imaging modality using anisotropic gamma emission from hyperpolarised nuclei

**17:10** G. Kumar - Advances in Radon Based Earthquake Forecasting using Sensor Networking

**17:30** Z. Maniati - Studying temporal trends of radionuclides' and chemical concentrations accumulated at the North Cretan Basin, Greece

**17:50** C. Tsabaris - The development of a detection system to inspect suspicious nuclear objects in ships' hull in the frame of the EU UnderSEC project

**18:10 Short break**

**18:15 HNPS General Assembly and Elections**

**20:30 Conference Dinner**

## Saturday 07/06/2025

### Session 5 Chair: G. Souliotis

**10:00** P. Koseoglou - Gamma-spectroscopy on the well-deformed  $^{178}\text{Yb}$

**10:20** A. Martinou - Future perspectives of the proxy-SU(3) symmetry

**10:40** K. Gkatzogias - Multinucleon transfer mechanisms in peripheral collisions of  $^{40}\text{Ar} + ^{64}\text{Ni}$  at 15 MeV/nucleon

**11:00** E. Kontogianni - Multinucleon Transfer in Peripheral Collisions of  $^{64}\text{Ni}$  on  $^{64}\text{Ni}$  at 25 MeV/nucleon

**11:20** O. Fasoula - Multinucleon Transfer Channels in  $^{86}\text{Kr} + ^{64}\text{Ni}$  peripheral collisions at 15 and 25 MeV/nucleon

**11:50** **Coffee break**

### Session 6 Chair: P. Koseoglou

**12:20** I. Kaissas - Analysis of SMR behavior during normal operation procedures and malfunction events using IAEA's IPWR simulation

**12:40** N. G. Nicolis - Progress in Modeling Proton Reactions on Natural Silicon Targets

**13:00** M. Peoviti - Preliminary results of (p, $\gamma$ ) and ( $\alpha$ , $\gamma$ ) reaction cross-sections on  $^{73}\text{Ge}$  relevant to nuclear astrophysics

**13:20** E. Mitsi - *In-situ* observation of radiation damage saturation in ion irradiated Fe thin films

**13:40** **Closing Remarks for HNPS25**

## Poster contributions

<b>Poster session: Friday 06/06/2025 12:50</b>	
<b>P-1</b>	A. Pakou - Abnormal large reaction cross sections for weakly bound nuclei at deep sub-barrier energies
<b>P-2</b>	M. Lizardou - Calculations of water activation in fission reactors using Monte Carlo simulations
<b>P-3</b>	A. Tasiopoulou - Analysis of historical events using sediment cores and nuclear methods
<b>P-4</b>	E. Kapsokoli - Soil Radioactivity in urban parks of Piraeus
<b>P-5</b>	S. Zonitsas - Development and Evaluation of a new Proton Irradiation Experimental Set-up for Radiobiological Experiments using Human Cells
<b>P-6</b>	K. Palli - Reaction mechanism for ${}^8\text{B}+{}^{\text{nat}}\text{Zr}$ at the sub-Coulomb energy of 26.5 MeV
<b>P-7</b>	E. Karpouza - Evaluation of Environmental Radioactivity in Thessaly after Storm Daniel: A Pilot Study
<b>P-8</b>	R. Kourgiantakis - Study of Point Defects due to Ion Irradiation in the CrMnFeCoNi High Entropy Alloy
<b>P-9</b>	E. Travlou - Multinucleon transfer in peripheral collisions of ${}^{86}\text{Kr}$ on ${}^{208}\text{Pb}$ at 25 MeV/nucleon
<b>P-10</b>	M. Efstathiou - Ground-state lifetime measurements in Tellurium decay chains: Method and Results
<b>P-11</b>	S. Koulouris - Elastic Scattering of Medium-Mass Heavy-Ions and the Compressibility of the Nuclear Equation of State
<b>P-12</b>	N. Giannakou - Neutron Activation Cross Section Measurement of the (n,2n) Reaction on ${}^{203}\text{Tl}$ at 14.6 MeV
<b>P-13</b>	K. Topalis - Investigating the nuclear structure of ${}^{116,118}\text{Te}$
<b>P-14</b>	Ch. Giannitsa - Investigation of $\alpha$ -cluster Transfer in Peripheral Collisions of ${}^{40}\text{Ca}$ (12.3 MeV/nucleon) + ${}^{27}\text{Al}$ using the MARS Spectrometer at Texas A&M
<b>P-15</b>	S. Karachristos - Study of Deuteron-Induced Reactions in ${}^{18}\text{O}$ in the Framework of NRA
<b>P-16</b>	A. Violanti - Gamma-ray spectroscopic analysis around the N=104 mid-shell for ${}^{176,177}\text{Yb}$ and ${}^{182}\text{W}$ nuclei
<b>P-17</b>	A. Karakaxi - Time-of-Flight Neutron Transmission Measurements on ${}^{\text{nat}}\text{Cu}$ at the GELINA Facility
<b>P-18</b>	G. Apostolopoulos - OpenTRIM: an open source Monte-Carlo simulation code for ion transport in materials
<b>P-19</b>	M. Karlatira - Measurement of the ${}^{234}\text{U}(n,f)$ cross-section with Micromegas Detectors
<b>P-20</b>	D. A. Papadopoulos - Investigation of the Yb and W isotopic chains using the confined $\beta$ -soft rotor model
<b>P-21</b>	K. Konstantinidis - Measurement of the differential cross sections of the ${}^{24}\text{Mg}(p,p'\gamma)$ reaction at three detection angles relevant to the PIGE technique
<b>P-22</b>	A. Lympelopoulou - Hauser-Feshbach studies of $\alpha$ -capture reactions in molybdenum isotopes
<b>P-23</b>	N. Pouris - Flux Determination of the 17MeV quasi-monoenergetic Neutron Beam at NCSR "DEMOKRITOS" using the Multiple Foil Activation technique
<b>P-24</b>	E. Bampaloukas - Setup and calibration of in-situ gamma-ray spectrometer for marine applications
<b>P-25</b>	I. Tsormpatzoglou - Characterization of BC501A Liquid Scintillator for Neutron-Gamma Discrimination using the Pulse Shape Analysis Technique

<b>P-26</b>	D. P. Nikou - Estimation of cross section for proton-induced reactions in stable Yb isotopes at astrophysical energies
<b>P-27</b>	S. K. Roumelioti - Calibration of CZT detector systems for laboratory measurement of marine sediment
<b>P-28</b>	G. Andrianopoulos - Design and operation of an Inertial Electrostatic Confinement Fusion Device (FUSOR)
<b>P-29</b>	A. Kalamara - Simulations for Optimization of Proton Dose Delivery Using the Advanced Markus Chamber
<b>P-30</b>	T. Schizas - Development and construction of an Arduino-based Geiger-Müller detector for radiation monitoring applications