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# HNPS2018

27<sup>th</sup> Annual Symposium  
Hellenic Nuclear Physics Society



8-9 June 2018

National and Kapodistrian University of Athens  
Amphitheater "Aristotelis" • Department of Physics



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
Εθνικόν και Καποδιστριακόν  
Πανεπιστήμιον Αθηνών  
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# HNPS2018

8 and 9 June 2018

National and Kapodistrian  
University of Athens

Department of Physics  
Amphitheater “Aristotelis”

Organizing Committee

Theo J. Mertzimekis

Georgios A. Souliotis

Efstathios Stiliaris

# HNPS2018 - The 27th Annual Symposium of the Hellenic Nuclear Physics Society

## DAY 1 - FRIDAY 08 June 2018

08'00 - 08'30 Registration  
08'30 - 08'45 Welcome Speeches

### Session I

Chair: Dr. Sotirios Harissopoulos  
08'45 - 09'00 A. Bonasera *Bose-Einstein Condensation, Fermionic Quenching and Efimov States From Heavy-Ion Collisions*  
09'00 - 09'30 D. Bonatsos *Particle-hole symmetry breaking due to Pauli blocking*  
09'30 - 09'45 I. Assimakis *Magic numbers for shape coexistence*  
09'45 - 10'00 D. Papoulias *Constraining new physics from the first observation of coherent elastic neutrino-nucleus scattering*  
10'00 - 10'15 N. Nicolis *Spallation of  $^{56}\text{Fe}$  by 1 GeV protons*

### Coffee Break (30')

### Session II

Chair: Dr. Dionysios Bonatsos  
10'45 - 11'00 S. Harissopoulos *2018, 55 years of nuclear physics experiments in Greece and 30 years of nuclear astrophysics at the Tandem accelerator of Demokritos*  
11'00 - 11'30 Yu-Gang Ma *Viscosity of nuclear matter*  
11'30 - 11'45 H. Rahangdale *Branching Ratio measurement in  $^{23}\text{Ne}$  Beta Decay*  
11'45 - 12'00 P. Koseoglou *Phase transition at N=90: structural properties of  $^{148}\text{Ce}$*   
12'00 - 12'15 A. Khaliel *Nuclear magnetic moment studies of short-lived excited states at the edge of the island of inversion*  
12'15 - 12'30 J. Klimo *Direct measurement of fission barrier heights of unstable heavy nuclei at ISOL facilities*  
12'30 - 13'30 Presentations by MIRION representatives (Coordinator: Dr. Christos Tsabaris)

### POSTER SESSION - Chair: Assoc. Prof. Xenophon Aslanoglou

### Lunch Break

### Session III

Chair: Assoc. Prof. Stylianos Stoulos  
15'00 - 15'15 C. Tsabaris *An in-situ method for mapping radioactivity at beach sands using the mobile gamma-ray spectrometry*  
15'15 - 15'30 A. Kalaitzis *U-series geochronology of fossil bones using  $\gamma$ -spectrometry in comparison to  $^{14}\text{C}$  dating results*  
15'30 - 15'45 F.K. Pappa *Application of radio-dating methods in marine areas of Greece*  
15'45 - 16'00 C. Betsou *Heavy metals and radionuclides concentrations in mosses from the region of Northern Greece*  
16'00 - 16'15 D. Patiris *Raindrop "age" estimation by in-situ, continuous monitoring of atmospheric radon progenies*

### Coffee Break (30')

### Session IV

Chair: Assoc. Prof. Michael Kokkoris  
16'45 - 17'00 M. Constantinou *The proton spin puzzle from Lattice QCD*  
17'00 - 17'15 A. Gezerlis *Strongly interacting nucleons: from few to many*  
17'15 - 17'30 P. Ganoti *Light flavour hadron and inclusive charged particle  $p_T$ -spectra measured with the ALICE experiment at CERN*  
17'30 - 17'45 P. Kyratzis *Study and Detection of Relativistic Solar Neutrons at Ground level with the Spherical Proportional Counter*  
17'45 - 18'00 I. Kaissas *Results of efficiency, accuracy, spatial resolution of a coded aperture imaging system*

### Short Break (15')

18'15 - 20'30 HNPS General Assembly - Elections

### DINNER

## DAY 2 - SATURDAY 09 June 2018

### Session V

Chair: Prof. Aldo Bonasera

- 09'00 - 09'15 T. Gaitanos *In-Medium Strangeness Production and hyperon-potentials*  
09'15 - 09'30 S. Karampagia *Nuclear Shell Model and Quantum Phase Transitions*  
09'30 - 09'45 A. Martinou *Shape Coexistence*  
09'45 - 10'00 P. Papakonstantinou *KIDS functional for applications in homogeneous matter and finite nuclei*  
10'00 - 10'15 A. Gilho *Nuclear Energy Density Functional KIDS and Mass-Radius Relation of Neutron Stars*

### Coffee Break (30')

### Session VI

Chair: Prof. Rosa Vlastou

- 10'45 - 11'00 C. Moustakidis *Constraints on the inner boundary of a neutron star crust with applications on slow rotating neutron stars*  
11'00 - 11'15 S. Nikas *Contributions of high Ye ejecta of neutron star mergers in the r-process nucleosynthesis*  
11'15 - 11'30 I. Madesis *Investigation of the  $C^{3+}$  KLL spectrum obtained in collisions of 6-15 MeV  $C^{4+}$  ( $1s^2, 1s2s^3 S$ ) with gas targets*  
11'45 - 12'00 A. Laoutaris *Investigation of  $2s2p^{3,1} P$  excitation lines in 6-18 MeV  $C^{4+}$  ( $1s^2, 1s2s^3 S$ ) collisions with gas targets*  
12'15 - 12'30 M. Fragopoulou *The sensitivity of p-MOSFET dosimeter heavy ions*  
12'30 - 12'45 A. Mylonakis *Neutron noise modelling for nuclear reactor diagnostics*

### Short Break (15')

### Session VII

Chair: Dr. Ion Stamatielatos

- 13'00 - 13'15 T. Vasilopoulou *Overview of NCS RD Activation Experiments at JET*  
13'15 - 13'30 P. Tsavalas *Differential Cross Sections of  $^9 Be(d,p_0)^{10} Be$ ,  $^9 Be(d,p_1)^{10} Be$ ,  $^9 Be(d,\alpha_0)^7 Li$  and  $^9 Be(d,\alpha_1)^7 Li$  reactions*  
13'30 - 13'45 E. Ntemou *Measurement of the differential cross sections of  $^9 Be(d,d_0)$  at energies and angles suitable for EBS*  
13'45 - 14'00 A. Kalamara *Cross section measurement of the  $^{191} Ir(n,2n)^{190} Ir$  reaction*  
14'00 - 14'15 V. Michalopoulou *Measurement of the  $^{236} U(n,f)$  cross-section between 4 and 10 MeV with Micromegas detectors*  
14'15 - 14'30 R. Vlastou *Feasibility studies of  $(n,xn)$  reactions with HPGe detectors at the CERN nTOF facility*

### CLOSING REMARKS - END OF HNPS2018

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