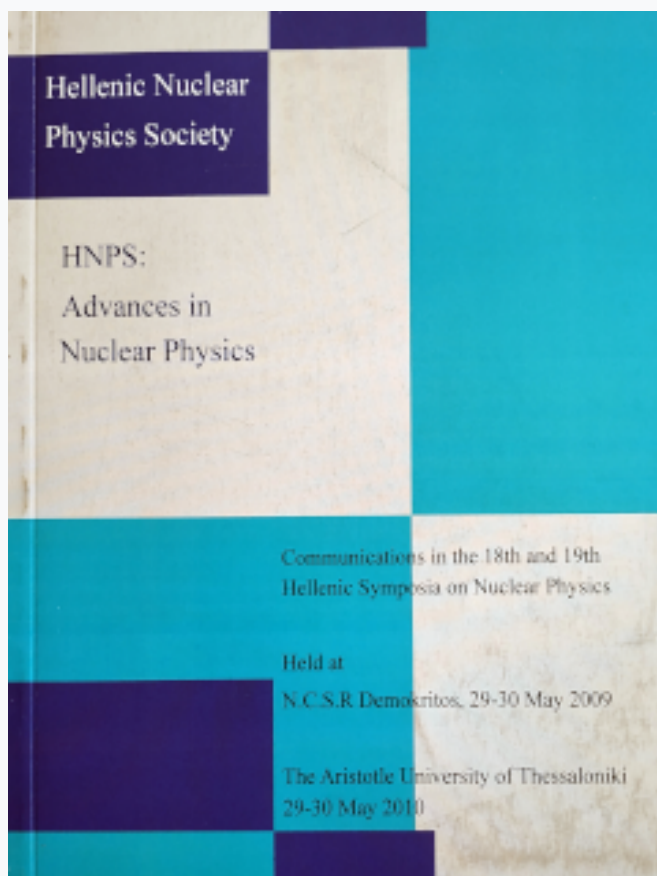


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Proceedings of the 18th Hellenic Nuclear Physics Society
Symposium 2009

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18th Symposium of the Hellenic Nuclear Physics Society

N.C.S.R. Demokritos, 29-30 May 2009

PROGRAMME*

FRIDAY, 29 May 2009

Session I Chair: Pakou, Athena (U. Ioannina)

08.45 - 09.00 Opening

09.00 - 10.00 Casten, Richard F. (Yale U., U.S.A.)

Quantum phase transitions in nuclei: empirical signatures of collective structural evolution and its microscopic drivers.

10.00 - 10.20 Lalazissis, Georgios (U. Thessaloniki)

Relativistic density functionals for nuclear structure studies.

10.20 - 10.40 Kosmas, Theocharis (U. Ioannina)

The nucleus as a laboratory to study low-energy neutrino physics.

10.40 - 11.00 Fossion, Ruben (U. Nacional Autonoma de Mexico, Mexico)

Chaos in hadrons.

Session II Chair: Vlastou, Rosa (National Technical U. Athens)

11.30 - 11.50 Zamani-Valasiadou, Maria (U. Thessaloniki)

New experimental cross section data for transmutation and astrophysics applications.

11.50 - 12.05 Moustakidis, Charalambos (U. Thessaloniki)

Equation of state for dense supernova matter.

12.05 - 12.25 Souliotis, Georgios (Texas A&M, U.S.A., and U. Athens)

Studies of the nuclear landscape and the nuclear equation of state using peripheral collisions near the Fermi energy.

12.25 - 12.45 Veselsky, Martin (IP, SAS, Bratislava, Slovakia)

Isospin dynamics and production of exotic nuclei below 50 A MeV.

12.45 - 13.00 Patronis, Nikolas (U. Ioannina)

Analysis of elastic backscattering and fusion data for $6,7\text{Li} + 28\text{Si}$ at sub- and nearbarrier energies: Probing the nuclear potential anomaly of weakly bound nuclei.

15.00- 16.00 Satellite meeting on Environmental Radioactivity

Session III Chair: Stiliaris, Efstathios (U. Athens)

15.00 - 15.15 Konstantinopoulos, Theodoros (INP, NCSR Demokritos)

^{128}Xe lifetime measurement using the Coulex-plunger technique in inverse kinematics.

15.15 - 15.30 Zerva, K. (U. Ioannina)

Elastic backscattering measurements for $6,7\text{Li} + 28\text{Si}$ at sub- and near-barrier energies.

15.30 - 15.45 Tsiganis, Andreas (National Technical U. Athens)

Study of the $^{197}\text{Au}(n,2n)$ reaction cross section.

15.45 - 16.00 Diakaki, Maria (National Technical U. Athens)

Study of the $d+^{11}\text{B}$ system differential cross sections for NRA purposes.

16.00 - 16.15 Foteinou, Varvara (INP, NCSR Demokritos)

Cross section measurements of d -induced reactions on lithium.

16.15 - 16.30 Provatas, Georgios (INP, NCSR Demokritos)

Proton elastic scattering differential cross section measurements of ^{45}Sc .

17.00 - 19.00 General Assembly of the Hellenic Nuclear Physics Society

SATURDAY, 30 May 2009

Session IV Chair: Florou, Eleni (INT-RP NCSR Demokritos and U. Athens)

08.30 - 08.45 Aslanoglou, Xenofon (U. Ioannina)

The CASTOR calorimeter at CERN: Recent developments.

08.45 - 09.00 Savvidis, Ilias (U. Thessaloniki)

Underground low flux neutron background measurements in LSM using a large volume (1m^3) spherical proportional counter.

09.00 - 09.15 Mikeli, Maria (U. Athens)

Scintillation crystals for gamma-camera imaging devices.

09.15 - 09.30 Ioannidou, Alexandra (U. Thessaloniki)

Activity size distribution of ^7Be aerosols and their influence by air pollutants.

09.30 - 09.45 Tsabaris, Christos (Hellenic Centre for Marine Research)

The development and application of an autonomous in situ gamma-ray spectrometer for continuous radioactivity monitoring.

09.45 - 10.00 Bagatelas, Christos (Hellenic Centre of Marine Research)

Monte Carlo simulation of a NaI detector in the aquatic environment.

10.00 - 10.15 Patiris, Dionisis (U. Ioannina)

Detection of plated-out radon progenies on CR-39 detectors.

10.15 - 10.30 Sokaras, Dimosthenis (INP, NCSR Demokritos)

Measurement of the X-ray resonant Raman scattering cross section on aluminum.

10.30 - 10.45 Kantarelou, Vassiliki (INP, NCSR Demokritos)

Micro-XRF analysis of gilded bronze figurines at the national archaeological museum of Damascus.

Session V Chair: Ch. Moustakidis (U. Thessaloniki)

11.15 - 11.30 Anagnostatos, Gerassimos (INP, NCSR Demokritos)

Multi-harmonic shell model of nuclear structure.

11.30 - 11.45 Tarpanov, Dimitar (INRNE, BAS, Sofia, Bulgaria)

The effects of a tensor force on the single-particle evolution in $Z=14$ and $N=28$ chains.

11.45 - 12.00 Daoutidis, Ioannis (Technical U. Munich, Germany)

The relativistic RPA approach with exact coupling to the continuum.

12.00 - 12.15 Prassa, Vaia (U. Thessaloniki)

Kaon potentials in heavy ion collisions at intermediate energy.

12.15 - 12.30 Balasi, Konstantia (U. Ioannina)

Neutrino scattering off the stable even-even Mo isotopes.

12.30 - 12.45 Karathanou, Georgia (U. Ioannina)

Coherent scattering detection of $8B$ and hep solar neutrinos.

12.45 - 13.00 Tsakstara, Vaitsa (U. Ioannina)

Nuclear response to supernova neutrino spectra.

13.00 - 13.15 Stavrou, Vasilios (Hellenic Naval Academy) and Kardaras, Ioannis (U. Ioannina)

Nuclear muon capture rates by using relativistic muon wavefunctions.

13.15 - 13.30 Bonatsos, Dennis (INP, NCSR Demokritos)

A long sought result: Closed analytical solutions of the Bohr Hamiltonian with the Morse potential

13.30 Closing

* Talks will take place in the amphitheater of the Institute of Materials Science.

Registration, coffee breaks, lunch, poster session will take place on the upper floor of the Tandem Accelerator Laboratory.

POSTERS

P01 Chatzisavvas, K. (U. Thessaloniki)
Complexity and neutron stars structure.

P02 Eleftheriadis, Konstantinos (INT-RP NCSR Demokritos)
Attachment coefficient of ^{211}Pb on polydisperse aerosol.

P03 Eleftheriou, Georgios (Hellenic Centre of Marine Research)
Vertical distribution of ^{137}Cs and natural radioactivity in core sediments of Thermaikos Gulf, northwestern Aegean Sea.

P04 Evangeliou, Nikolaos (INT-RP NCSR Demokritos and U. Athens)
The use of radionuclides ^{137}Cs and ^{234}Th in oceanographic research.

P05 Fragopoulou, Marianthi (U. Thessaloniki)
A neutron dosimeter of high sensitivity based on p-MOSFETs.

P06 Karatzikos, Stavros (U. Thessaloniki)
The fission barriers in actinides and superheavy nuclei in the covariant density functional theory.

P07 Manolopoulou, Metaxia (U. Thessaloniki)
Nonlinearity of recoil pulse height events in He-3 counters.

P08 Manousakas, Manousos-Ioannis (U. Patras)
Measurements of natural radionuclides in soil cores from the area of Megalopolis, Southern Greece.

P09 Pavlou, Georgios (U. Athens)
A CBF calculation of $^1\text{S}_0$ superfluidity in the inner crust of neutron stars.

P10 Prospathopoulos, Aristides (Hellenic Centre for Marine Research)
A new method for automated analysis of in-situ NaI spectra in the marine environment based on discrete wavelet transform.

P11 Smpoulias, Theodoros (TEI of Western Macedonia, Kastoria)
Modelling neutrino emission from the jets in the SS433 microquasar

P12 Soupioni, Magdalini (U. Patras)
Bioaccumulation of heavy metals and ^{137}Cs in *Mytilus galloprovincialis* from Galaxidi Gulf, Greece.

P13 Stamoulis, Kostas (U. Ioannina)
Determination of uranium and radium isotopes in water samples by liquid scintillation counting, using alpha/beta discrimination.

P14 Stoulos, Stilianos (U. Thessaloniki)

Indoor Radon source potential: Dose assessment on a model dwelling at temperate climate