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20th CONFERENCE OF THE HELLENIC NUCLEAR PHYSICS SOCIETY - HNPS 2011

27 - 28 May 2011, Athens, Greece
National Technical University of Athens, Zografou Campus,
Multimedia Amphitheatre, Central Library Building

BOOK OF ABSTRACTS

Organized by:

National Technical University of Athens, Department of Physics
Hellenic Centre for Marine Research
Hellenic Nuclear Physics Society

Organizing Committee:
Michael Kokkoris (NTUA)
Christos Tsabaris (HCMR)
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20th CONFERENCE OF THE HELLENIC NUCLEAR PHYSICS SOCIETY

National Technical University of Athens, May 27-28, 2011

Multimedia Amphitheatre – Library Building – Zografou Campus

Organizing Committee: M. Kokkoris, C. Tsabaris, R. Vlastou

SCIENTIFIC PROGRAM

Friday 27 May 2011

08:30-09:00 **Registration**

09:00-09:20 **Opening of the Conference**

09:00-09:10 Address by the Rector of NTUA

09:10-09:20 Welcoming remarks by the President of the HNPS and the Organizing Committee

09:20-11:20 **SESSION I** Chair: **C. A. Kalfas** (NCSR “Demokritos”)

09:20-09:40 **D. Bonatsos** (NCSR “Demokritos”)

Group contractions and conformal maps in nuclear structure models

09:40-10:00 **M. Zamani-Valasiadou** (AUTH)

Nuclear tracks in solids

10:00-10:20 **G. A. Souliotis** (UoA)

Approaching neutron-rich nuclei towards the r-process path in peripheral heavy-ion collisions at 15 MeV/nucleon

10:20-10:40 **P. Demetriou** (NCSR “Demokritos”)

Fission properties of actinide nuclei at energies 26.5 and 62.9 MeV

10:40-11:00 **G. S. Anagnostatos** (NCSR “Demokritos”)

Towards a unification of independent particle and collective models

11:00-11:20 **M. Kokkoris** (NTUA)

Evaluation of differential cross-sections for light element reactions at low energies using R-matrix calculations

11:20-11:50 **Coffee Break**

11:50-13:50 **SESSION II** Chair: **M. Zamani-Valasiadou** (AUTH)

11:50-12:10 **C. A. Kalfas** (NCSR “Demokritos”)

A modern nuclear spectroscopy software package

12:10-12:30 **A. Lagoyannis** (NCSR “Demokritos”)

The installation of PAPAP at the tandem laboratory of the institute of nuclear physics, NCSR “Demokritos”

12:30-12:50 **S. F. Ashley** (NCSR “Demokritos”)

Lifetime measurements at NCSR “Demokritos”

12:50-13:10 **T. Konstantinopoulos** (NCSR “Demokritos”)

Measurement of nuclear lifetimes and $B(E2)$ values in ^{130}Xe as a test for $E(5)$ symmetry

13:10-13:30 **M. Fragopoulou** (AUTH)

Inelastic cross-section of the system deuteron-lead at GeVs

13:30-13:50 **V. Paneta** (NTUA, NCSR “Demokritos”)

Proton elastic scattering differential cross-section measurements for ^{12}C

13:50-15:20 **Lunch and Coffee Break**

15:20-16:00 **SESSION III** **Poster Session**

A. Kafkarkou (NTUA)

Differential cross-section measurements for the $p+^{19}\text{F}$ system

M. Zioga (UoA)

GEANT4/GATE simulation studies in the emission tomography

P. Chatzispiloglou (NTUA, NCSR “Demokritos”)

Full energy peak efficiency calibration of a HPGe detector using the MC method

F. Pappa (NTUA, HCMR)

Diffusion and transfer of ^{137}Cs in deep basins of the Aegean sea

D. Papageorgiou (NTUA, HCMR)

Radioactivity measurements in core sediments from the gulf of Corinth, the Litochoro coast and the Black Sea

A. P. Karageorgis (HCMR)

X-ray applications in marine sedimentology

A. Ioannidou (AUTH, INFN)

^{131}I , ^{137}Cs , ^{134}Cs from Fukushima fallout at Milano, Italy

G. Trabidou (NCSR ‘Demokritos’)

Comparative radiation impact assessment in marine and terrestrial biota

H. Kaberi (HCMR)

The use of natural and anthropogenic radionuclides in calculating the recent sedimentation rates in the marine environment

H. Florou (NCSR ‘Demokritos’)

^{137}Cs in marine sediments from the Eastern Mediterranean during the last 27-year period

A. Savidou (NCSR ‘Demokritos’)

Pre-decommissioning radiological characterization at the Greek research reactor

16:00-18:20 **SESSION IV** **Chair: I. Stamatelatos (NCSR ‘Demokritos’)**

16:00-16:20 **P. Misaelides** (AUTH)

Investigation of composite surface coatings using IBA techniques

16:20-16:40 **H. Florou** (NCSR ‘Demokritos’)

Controls and measurements governing the imports of food and feedstuffs originating from Japan following the accident at Fukushima

16:40-17:00 **C. Tsabaris** (HCMR)

In-situ and automated radionuclide quantitative characterization in aquatic ecosystems

17:00-17:20 **A. Godelitsas** (UoA)

Applications of “Demokritos” INP tandem accelerator in earth and environmental sciences

17:20-17:40 **M. Psaltaki** (NTUA)

Environmental models, a useful tool for assessment of radioactive impact on marine ecosystems

17:40-18:00 **A. N. Rapsomanikis** (UoA)

Sensitivity and resolution study of a small-field γ -camera system on a tomographic level

18:00-18:20 **T. Vasilopoulou** (NCSR “Demokritos”)

Large sample NAA: Developments and perspectives

18:30-19:30 **General Assembly of the Hellenic Nuclear Physics Society**

21:00 **Conference Dinner at the Taverna ‘SOUFALA’, near ‘Panormou’ metro station**

Saturday 28 May 2011

09:00-10:20 **SESSION V** Chair: **G. Lalazissis (AUTH)**

- 09:00-09:20 **T. J. Mertzimekis (UoA)**
A centennial of the nucleus discovery: The life and works of Ernest Rutherford
- 09:20-09:40 **E. Mavrommatis (UoA)**
NUPECC long range plan 2010: A summary of nuclear theory
- 09:40-10:00 **D. Petrellis (NCSR “Demokritos”)**
Quantum phase transition phenomena in odd–mass nuclei
- 10:00-10:20 **V. Blatzios (NTUA)**
Nilsson orbitals in quantum superintegrable systems

10:20-10:50 **Coffee Break**

10:50-12:30 **SESSION VI** Chair: **A. Panagiotou (UoA)**

- 10:50-11:10 **X. Aslanoglou (U. of Ioannina)**
Operational status of the CASTOR calorimeter at CMS with proton and heavy–ion beams
- 11:10-11:30 **T. Papaevangelou (CEA Saclay)**
The Micromegas Detector in Nuclear Physics
- 11:30-11:50 **G. Tsipolitis (NTUA)**
The Muon ATLAS MicroMegas Activity (MAMMA)
- 11:50-12:10 **C. Tziaka (AUTH)**
Monte–Carlo calculation of electrons and bremsstrahlung photons produced by U targets irradiated with a 20 MeV electron beam
- 12:10-12:30 **I. Savvidis (AUTH)**
Progress on a spherical proportional counter for nuclear reactor and supernova neutrino detection

12:30-13:30 **Light lunch**

13:30-14:50 **SESSION VII** Chair: **D. Bonatsos (NCSR “Demokritos”)**

- 13:30-13:50 **C. A. Efthimiou (AUTH)**
The RHVT approach and its application to Λ –hypernuclei
- 13:50-14:10 **G. I. Karathanou (U. of Ioannina)**
Updated solar neutrino fluxes with new heavy element abundances
- 14:10-14:30 **S. Karampagia (NCSR, “Demokritos”)**
Line of approximate $SU(3)$ symmetry inside the symmetry triangle of the IBM
- 14:30-14:50 **P. E. Georgoudis (NCSR, “Demokritos”)**
The deformation–dependent mass Davidson model

14:50 **Concluding remarks – End of the Conference**