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Proceedings of the 19th Hellenic Nuclear Physics Society Symposium 2010

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19^o SYMPOSIUM OF THE Symposium Programme

HELLENIC NUCLEAR PHYSICS SOCIETY
28 - 29 May 2010, Thessaloniki, Greece

Organising Committee:

Zamani – Valasiadou M.
Savvidis E.
Massen S.
Lalazissis G.

Friday 28/5/2010

Session 1: Chairman: A. Πάκου

9:30 - 9:50 Approximate symmetries in the Interacting Boson Model

D. Bonatsos *Institute of Nuclear Physics, NCSR Demokritos*

9:50 - 10:10 Non-Linear Derivative Interactions in Relativistic Mean-Field Theory

Th. Gaitanos *Universität Giessen, Department Institut für Theoretische Physik*

10:10 - 10:30 Influence of parasitic neutrons to the $^{176}\text{Hf}(n,2n)^{175}\text{Hf}$ cross section

R. Vlastou et al. *Department of Physics, National Technical University of Athens*

10:30 - 10:50 Neutron-Rich Rare-Isotope Production in Peripheral Heavy-Ion Collisions in the Energy Range of 15 MeV/nucleon

G.A. Souliotis *Laboratory of Physical Chemistry, Department of Chemistry, National and Kapodistrian University of Athens, Athens*

Session 2: Chairman: P. Βλαστού

Προσκεκλημένη Ομιλία

11:30 - 11:55 Σύγχρονες εξελίξεις στην ΤΕΧΝΟΛΟΓΙΑ ΠΥΡΗΝΙΚΗΣ ΕΝΕΡΓΕΙΑΣ, ασφάλεια, περιβάλλον

M. Αντωνόπουλος – Ντόμης *Aristotle University of Thessaloniki, Electrical and Computer Engineering*

11:55 - 12:10 Large Volume Spherical Proportional Counter: The structure and the applications

I. Savvidis et al. *University of Thessaloniki, School of Physics, Nuclear and Elementary Particle*

12:10 - 12:25 Alpha-Capture reactions in inverse kinematics relevant to p-process nucleosynthesis

A. Lagoyannis et al. *Institute of Nuclear Physics, NCSR Demokritos, Aghia Paraskevi, Athens, Greece*

12:25 - 12:40 Study of the $^{197}\text{Au}(n,2n)$ reaction cross section

A. Tsinganis et al. *Department of Physics, National Technical University of Athens*

12:40 - 12:55 Study of neutron threshold reactions on Np and Cd isotopes

M. Diakaki et al. *Department of Physics, National Technical University of Athens*

12:55 - 13:10 FISSION DETECTOR IN ASTROPHYSICS (FIDIAS)

M. Axiotis et al. *Institute of Nuclear Physics, NCSR Demokritos, GR-15310 Athens, Greece*

Session 3: Chairman: Α. Λαγογιάννης

14:20 - 14:35 Approaching marine environment by radiotracers' methods, the study of a submarine groundwater discharge source at southern Peloponnesus

D.L. Patiris et al. *Hellenic Centre for Marine Research, Institute of Oceanography, P.O. Box 712, GR-19013 Anavyssos, Greece*

14:35 - 14:50 ^7Be concentrations in the atmosphere at a year of solar minimum

E. Kotsopoulou and A. Ioannidou *Department of Physics, Nuclear Physics & Elementary Particle Physics Division, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece*

14:50 - 15:05 Aquatic Radioactivity Applications at HCMR using the Gamma Ray Spectrometry Method

C. Tsabaris et al. *Hellenic Centre for Marine Research, Institute of Oceanography, Department of Physics*

15:05 - 15:20 Gamma spectrometry technique for the determination of residence time in Submarine Groundwater Discharges

G. Eleftheriou et al. *Hellenic Centre for Marine Research, Institute of Oceanography, 19013 Anavyssos, Greece*

15:20 - 15:35 Activity size distribution of ^7Be under the influence of meteorological conditions

Vasileiadis et al. *Department of Physics, Nuclear Physics & Elementary Particle Physics Division, Aristotle University of Thessaloniki, 54124, Thessaloniki*

Session 4: Chairman: Δ. Μπονάτσος

16:05 – 16:25 Energy Density Functionals : Description of Nuclear Quantum Phase Transitions

G. A. Lalazissis *Department of Physics, Aristotle University of Thessaloniki GR-54124 Thessaloniki, Greece*

16:25 - 16:40 Parabosons, parfermions and graded Lie algebras

K. Kanakoglou *University of Michoacan (UMSNH), Morelia, Michoacan, Mexico*

16:40 - 16:55 Probing the Nuclear Symmetry Energy at high baryon densities in heavy ion collisions

V. Prassa *Department of Theoretical Physics, Aristotle University of Thessaloniki, GR-54124*

16:55 - 17:10 Analysis of Binding Energies of the Λ - particle in hypernuclei with the RHVT Approach and the Gauss Potential

C.A. Efthimiou, M.E. Grypeos, C.G. Koutroulos, Th. Petridou *Department of Theoretical Physics, Aristotle University of Thessaloniki, Greece*

17:10 - 17:25 Isotopic distributions in ^{40}Ar projectile fragmentation

N. Nicolis *University of Ioannina, Department of Physics*

18:00 Γενική Συνέλευση της Ελληνικής Εταιρείας Πυρηνικής Φυσικής

Poster List of the 19th Symposium of the Hellenic Nuclear Physics Society

28-29 May 2010, Thessaloniki

Vertical profiles of caesium – 137 in 3 different regions of Eastern Mediterranean Sea

Nikolaos Evangeliou and Heleny Florou *NCSR 'Demokritos', Institute of Nuclear Technology-Radiation Protection, Environmental Radioactivity Laboratory, 15310, Agia Paraskevi, Athens, Greece*

Isoscaling of mass A reconstructed quasiprojectiles from collisions in the Fermi energy regime

S. Galanopoulos *Hellenic Military Academy*

Theoretically and applied consideration (under very special conditions) a nuclear fission reactor may nuclear explode as nuclear bomb

Joseph-Christos Kondylakis *Hellenic Centre for Marine Research*

An online database for electromagnetic moments data

Th. Mertzimekis *NCSR Demokritos, Institute of Nuclear Physics*

Probing the $^{17}\text{F}+p$ potential by means of elastic scattering measurements at near barrier energies

N. Patronis *University of Ioannina, Physics Department/ Nuclear Physics Laboratory*

Radiological Risk Assessment in an Ecosystem Using ERICA Assessment Tool: Deficiencies and Improvements

A. E. Maroudi, H. Florou, M. J. Anagnostakis *NCSR 'Demokritos', Institute of Nuclear Technology-Radiation Protection, Environmental Radioactivity Laboratory, 15310, Agia Paraskevi, Athens, Greece*

Characterisation and Corrosion Behaviour of Nitrogen-Implanted Steel by Nuclear Reaction Analysis.

F. Noli, P. Misaelides, *Department of Chemistry, Aristotle University, GR-54124 Thessaloniki, Greece*

A Lagoyannis *Tandem Accelerator Laboratory, Nuclear Physics Institute, NCSR Demokritos, GR-15310 Aghia Paraskevi- Attiki, Greece*

Indirect measurements of inelastic cross sections of relativistic protons in Lead target

M. Zamania, S. Stoulosa, M. Fragopouloua, M. Manolopouloua *Aristotle University of Thessaloniki, School of Physics, Thessaloniki 54 124, Greece*

M. Krivopustov *Joint Institute for Nuclear Research (JINR) Dubna, Russia, 141980*

Electron capture in nuclear structure and astrophysics

P. Giannaka, T.S. Kosmas *Theoretical Physics Section, University of Ioannina, GR 45110 Ioannina, Greece*

High sensitivity MOSFET-based neutron dosimetry

M. Fragopoulou, Konstantakos V., M Zamani, S. Siskos, T. Laopoulos *Aristotle University of Thessaloniki, Physics Department, 54124 Thessaloniki, Greece*

G. Sarabayrouse *CNRS; LAAS; 7 avenue du colonel Roche, F-31077 Toulouse, France & Université de Toulouse; UPS, INSA, INP, ISAE; LAAS; F-31077 Toulouse, France*

Shannon Entropy of the (n,A) and (p,A) reactions

V.P. Psonis and S.E. Massen *Department of Theoretical Physics, Aristotle University of Thessaloniki*

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28-29 May 2010, Thessaloniki

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