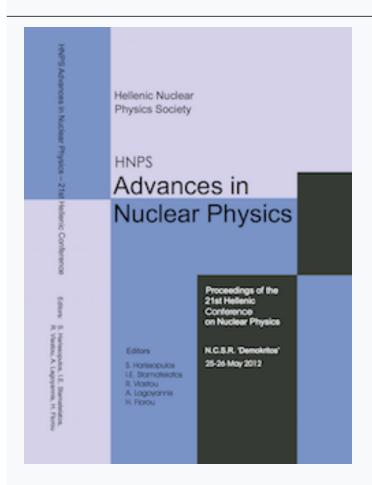




Annual Symposium of the Hellenic Nuclear Physics Society

Tóµ. 20 (2012)

HNPS2012



Editorial Comments and Symposium Info

/ Editorial Comments

doi: 10.12681/hnps.2033

Βιβλιογραφική αναφορά:

Editorial Comments, /. (2019). Editorial Comments and Symposium Info. *Annual Symposium of the Hellenic Nuclear Physics Society*, *20*, i-vii. https://doi.org/10.12681/hnps.2033

HELLENIC NUCLEAR PHYSICS SOCIETY

PROCEEDINGS

21st HELLENIC CONFERENCE

ON

NUCLEAR PHYSICS



NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS"

25 & 26 May 2012

SPONSORS

- INSTITUTE OF NUCLEAR & RADIOLOGICAL SCIENCES, TECHNOLOGY, ENERGY & SAFETY, NCSR "DEMOKRITOS"
- ENVIRONMENTAL RADIOACTIVITY LABORATORY, UTE OF NUCLEAR & RADIOLOGICAL SCIENCES, TECHNOLOGY, ENERGY & SAFETY, NCSR "DEMOKRITOS"
- TANDEM ACCELERATOR LABORATORY, INSTITUTE OF NUCLEAR & PARTICLE PHYSICS, NCSR "DEMOKRITOS"

HELLENIC NUCLEAR PHYSICS SOCIETY

GOVERNING BOARD

- R. VLASTOU (CHAIR)
- S. HARISSOPULOS (DEPUTY CHAIR)
- T. MERTZIMEKIS (SECRETARY)
- T. KOSMAS (TREASURER)
- M. ZAMANI (MEMBER)

ORGANIZING COMMITTEE – EDITORS

- S. HARISSOPULOS, NCSR "DEMOKRITOS"
- I.E. STAMATELATOS, NCSR "DEMOKRITOS"
- R. VLASTOU, NTUA
- A. LAGOYANNIS. NCSR "DEMOKRITOS"
- H. FLOROU, NCSR "DEMOKRITOS"

PREFACE

The present volume contains the Proceedings of the 21st Hellenic Conference on Nuclear Physics, held in the National Centre for Scientific Research "Demokritos", on 25th and 26th May 2012. The texts of the talks and posters are compiled as submitted by the authors.

This conference followed a series of Hellenic Nuclear Physics Conferences that started in 1990 at Thessaloniki and since then, they are yearly held at different Greek academic institutions. The aim of this series of conferences is to offer the local nuclear physics community the opportunity to present and discuss their latest activities in theoretical and experimental nuclear physics and applications, sometimes in collaboration with colleagues from abroad and with the usage of facilities in Greece and abroad. It is also a unique forum for presentations by young colleagues, in the early stages of their careers.

The conference was organized under the auspices of the National Centre for Scientific Research "Demokritos". The financial support offered by the Institute of Nuclear and Radiological Sciences, Technology, Energy and Safety, the Environmental Radioactivity Laboratory, and the TANDEM Accelerator Laboratory of the Institute of Nuclear and Particle Physics, NCSR "Demokritos" is gratefully acknowledged. Moreover, the encouragement and assistance provided by the Hellenic Nuclear Physics Society Governing Board, is also gratefully acknowledged. The help during the conference by several graduate and undergraduate students (names) is also warmly appreciated.

Athens 2013

Sotiris Harissopulos Ion Stamatelatos Rosa Vlastou Tassos Lagoyannis

TABLE OF CONTENTS

E. Koss	sionides	1
۷	40 years of "beam on target" at the Tandem accelerator (invited talk)	
R. Vlast	tou	2
1	New measurements of the 241Am(n,2n)240Am cross section	
M. Zam	nani	6
I	Fission induced by light particles at intermediate energies	
T. Alexe	opoulos	7
I	ATLAS New Small Wheel Upgrade: Micromegas	
G. Souli	liotis	8
	Studies of the process of N/Z equilibration in peripheral and semiperipheral heavy-ion collisions at 15 MeV/nucleon	
T. Kons	stantinopoulos	9
I	In search of nuclei exhibiting E(5) critical-point symmetry features	
P. Kritidis		10
	Radioactivity measurements one year after the nuclear accident in Fukushima, Japan (invited talk)	
A. Ioan	nidou	11
	Radionuclides from the Fukushima accident in Thessaloniki, Greece and Milano, Italy - measurements and modelling approaches	
M. Soti	ropoulou	12
	The Application of the ERICA Tool to Radioactivity Measurements for Environmental Impact Assessment: The Case Study of Fukushima	
A. Clou	ivas	13
	Radon in Soil: Experimental measurements and Theoretical calculations	
C. Tsab	paris	14
	Experimental Set Up for the Determination of Natural Radionuclides in Formation Waters Produced in Oil and Gas Exploration Fields	
G. Eleft	theriou	15
I	Radiological Modelling at Thermaikos Gulf	
E. Mav	rommatis	24
-	βDecay Half-Lives of Nuclei in the Crust of Neutron Stars: The ANN Model	
T.S. Ko	osmas	26
I	Astrophysical neutrino signals and the role of nuclear structure	

Ch. C. Moustakidis	27
Nuclear Equation of State Effects on the r-mode Instability of Neutro Stars	n
D. Petrellis	35
Nuclear physics aspects of the p-process	
I. Savvidis	
Neutron Detection via 14N(n,p)14C reaction Using the Spherical Proportional Counter	
M. Kokkoris	
Experimental study and FLUKA simulations of a prototype micromes chamber in a mixed neutron and photon radiation field	gas
T. J. Mertzimekis	44
The Application of the High-Velocity Transient Field for the g(21+) Measurement in the Neutron-rich 72Zn	
N. Patronis	
One neutron transfer reactions around 68Ni: First results from the 66Ni(d,p)67Ni experiment	
K. Mergia	
Research activities of NCSR "Demokritos" for the European Fusion Technology Program	
Z. Kotsina	55
Radiation damage studies of Fe-Cr alloys for Fusion applications using ion beams	ıg
A. Godelitsas	61
Activities of the University of Athens at SUL-X and FLUO beamline of ANKA Synchrotron facility in Earth & Environmental Sciences	S
J. Kalef-Ezra	62
Applications of a Novel Whole Body Counter in Radiation Protection and Human Body Composition Studies	1
AN. Rapsomanikis	66
Phantom Experimentation on SPECT and Infrared Tomography	
M. Zioga	73
Image Reconstruction in the Positron Emission Tomography	
N. G. Nicolis	80
Population of isomeric states in neutron-induced reactions on 197Au	
M. Diakaki	
Characterization of actinide targets for fission cross section measurements	

V. Paneta		89
	ection measurements for the 7Li(p,p0)7Li, $(p,p0)19F$ and $19F(p,\alpha0)16O$ reactions	
V. Tsakstara		96
Studying nuclear re	esponses to Supernova neutrinos	
D.K. Papoulias		104
Lepton -flavor viol	ating neutral-current exotic v-nucleus processes	
P.G. Giannaka		112
Realistic nuclear st	ructure calculations for orbital e-capture by nuclei	
K. Eleftheriadis		120
Radioactive tracers aerosols	for long range transport of biomass burning	
T. Vasilopoulou		121
Large Sample Neut Studies	tron Activation Analysis for Cultural Heritage	
A. Savidou		129
Techniques Used for	or Clearance of Radioactive Waste	
D. L. Patiris		133
Sediment measurer by means of gamm	ment of samples from Tigris and Euphrates estuary a-ray spectroscopy	
A.Kalamara		134
Monte Carlo MCN extended sample ge	P modeling of a HPGe detector and its efficiency for cometry	
E. Androulakaki		139
In situ Gamma-Ray Carlo Simulation	Measurements of Marine Sediment using Monte	
A. Godelitsas		145
Heavy metals and r island (Greece)	radionuclides in the northern coastal zone of Ikaria	
I. Tzifas		146
High uranium conc Greece)	entrations in sedimentary rocks of Epirus (NW	
J. Kalef-Ezra		147
Induced Radioactiv	rity in Medical Accelerators	
E. Vagena		152
Measurements and medical accelerator	Monte Carlo simulations of neutron production at a	

S. Valakis		
Effect of Radon Concentration in Air on the Quality of Radioactivity Measurements in the Human Body		
H. Florou		
Indicative Radiation Dose Rates in Selected Areas of Elevated Natural radioactivity in Greece		
F. Panagiotopoulos	158	
3D Modeling of the New Microbeam Setup at INP, NCSR "Demokritos"		
K. Stamou	159	
A Nuclear Electromagnetic Moments Database		
A. Kanellakopoulos	160	
Characterization of Nuclear Targets and Thin Films Using Ion-Beam Techniques		
N. Gazis		
Fabrication and validation of the prototype supporting system for the CLIC Two-Beam Modules		
F. Noli	165	
N- and O-depth distribution by NRA for the investigation of the corrosion resistance of plasma nitrided and oxidized CoCrMo alloy		
V. Foteinou		
Proton capture reactions for the p-process nucleosynthesis: the case of the Mo isotopes		
G. Provatas	167	
Systematic measurements of (alpha,gamma) reaction cross sections for astrophysics applications		
SCIENTIFIC PROGRAM	169	
	207	
LIST OF PARTICIPANTS	173	