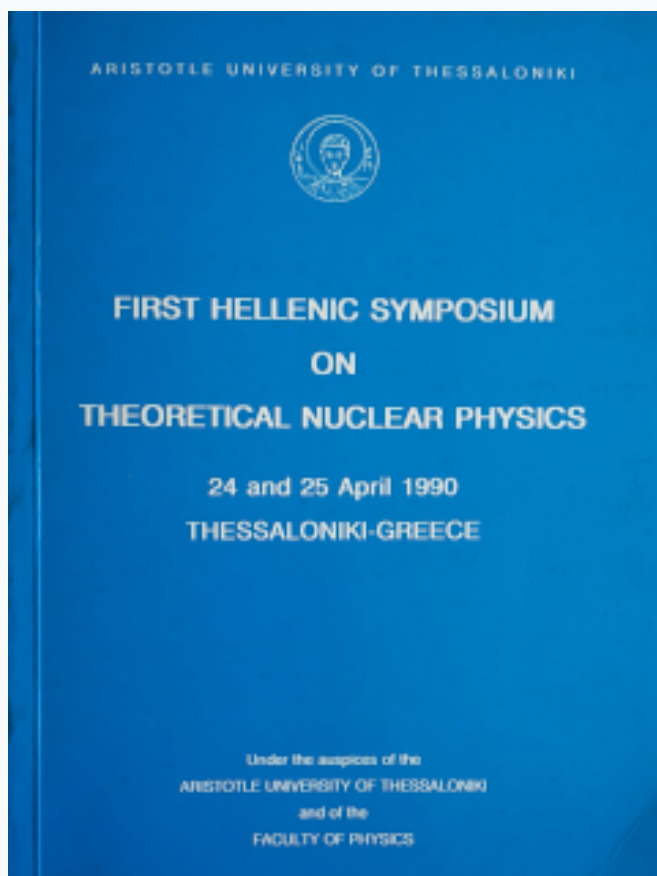


HNPS Advances in Nuclear Physics

Vol 1 (1990)

HNPS1990



Editorial Comments and Symposium Info

/ *Editorial Comments*

doi: [10.12681/hnps.2819](https://doi.org/10.12681/hnps.2819)

To cite this article:

Editorial Comments, /. (2020). Editorial Comments and Symposium Info. *HNPS Advances in Nuclear Physics*, 1, 1–10.
<https://doi.org/10.12681/hnps.2819>

ARISTOTLE UNIVERSITY OF THESSALONIKI



**FIRST HELLENIC SYMPOSIUM
ON
THEORETICAL NUCLEAR PHYSICS**

**24 and 25 April 1990
THESSALONIKI-GREECE**

Under the auspices of the
ARISTOTLE UNIVERSITY OF THESSALONIKI
and of the
FACULTY OF PHYSICS

Edited by the Local Organizing Committee

Published by the University
Publication Office
University of Thessaloniki
University Campus
Administration building (Tel.No 031-992897)
Thessaloniki, 54006
Greece

Copies available from
The Secretary
Department of Theoretical Physics
Faculty of Physics
University of Thessaloniki
Thessaloniki, 54006
Greece
[Tel No 031-992842]

1ο ΠΑΝΕΛΛΗΝΙΟ ΣΥΜΠΟΣΙΟ
ΘΕΩΡΗΤΙΚΗΣ ΠΥΡΗΝΙΚΗΣ ΦΥΣΙΚΗΣ

ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΕΣΣΑΛΟΝΙΚΗΣ

24-25 ΑΠΡΙΛΙΟΥ 1990

Συντονιστική Επιτροπή

Γ.Αναγνωστάτος (ΕΚΕΦΕ "Δημόκριτος")
Μ.Γρυπαίος (Πανεπ.Θεσσαλονίκης)
Ε.Μαυρομμάτη (Πανεπ.Αθηνών)
Δ.Μπονάτσος (ΕΚΕΦΕ "Δημόκριτος")
Λ.Σκούρας (ΕΚΕΦΕ "Δημόκριτος")

Τοπική οργανωτική Επιτροπή

Μ.Γρυπαίος
Κ.Δασκαλογιάννης
Χ.Κούτρουλος
Σ.Μάσεν
Χ.Πάνος

LIST OF PARTICIPANTS

-G.S.Anagnostatos

NCSR "Democritos", Aghia Paraskevi Attikis

-D.Bonatsos

NCSR "Democritos", Aghia Paraskevi Attikis

-C.Daskaloyannis

University of Thessaloniki

-G.P.Flessas

University of the Aegean

-M.E.Grypeos

University of Thessaloniki

-B.Kargas

TEI of Thessaloniki

-T.S.Kosmas

University of Ioannina

-C.G.Koutroulos

University of Thessaloniki

-G.A.Lalazissis

University of Tübingen, Germany

-E.Mavrommatis

University of Athens

-S.E.Massen

University of Thessaloniki

-C.P.Panos

University of Thessaloniki

-G.Papadopoulos

University of Thessaloniki

-Th.Petridou

University of Thessaloniki

-J.Sinatkas

NCSR "Democritos", Aghia Paraskevi Attikis

-L.D.Skouras

NCSR "Democritos", Aghia Paraskevi Attikis

-C.Syros

University of Patras

-J.C.Varvitsiotis

NCSR "Democritos", Aghia Paraskevi Attikis

-K.Ypsilantis

University of Thessaloniki

CONTENTS

Preface	9
 SESSION 1	
E.Mavrommatis and J.W.Clark, Microscopic Study of the Response of Nuclear Matter	11
T.S.Kosmas and J.D.Vergados, Nuclear form factors and closure approximation in the study of (μ^+, e^-) conversion in nuclei.	27
T.S.Kosmas and J.D.Vergados, Nuclear distributions, rms radii and form factors with the harmonic oscillator shell model.	33
G.Pantis and J.D.Vergados, Double beta decay without invoking closure.	45
 SESSION 2	
M.E.Grypeos, G.A.Lalazissis, S.E.Massen and C.P.Panos, Relative probability of recoilless Λ -production in nuclei in the plane-wave impulse approximation.	53
S.E.Massen, Correlated charge form factors and densities of the sd-shell nuclei	62
 SESSION 3	
G.A.Lalazissis, M.E.Grypeos and S.E.Massen, Study of energy quantities for a hyperon in hypernuclei using a single particle potential.	77
D.Bonatsos and H.Müther, Microscopic calculation of the optical model potential from one boson exchange potentials.	86
D.Bonatsos, L.D.Skouras and J.Rikovska, Tests of collective models based on the systematics of experimental data.	92
 SESSION 4	
G.S.Anagnostatos, Clusters in atoms and nuclei.	98
L.D.Skouras, P.Van Isacker and M.A.Nagarajan, A democratic mapping between the shell model and the IBM.	115

G.P.Flessas and P.G.L.Leach, A completely integrable case in the complex Lorenz equations. 126

C.Daskaloyannis, Equivalent local potentials for a coupled channel system and the optical potential. 134

Th.Petridou and C.Daskaloyannis, Conditions for the existence of peaks in the Sigma hypernucleus spectra. 144

SESSION 5

J.Sinatkas,L.D.Skouras,D.Strottman and J.D.Vergados, Shell model calculations in the $A=80$ -100 mass region and study of double β -transitions. 156

J.C.Varvitsiotis and L.D.Skouras, Effective interactions in the sd and p shells. 168

SESSION 6

C.Syros, On the foundations of Statistical Nuclear Physics. 179

C.G.Koutroulos and M.E.Grypeos, Approximate relativistic mass-formulae for the ground state binding energy of a Λ in hypernuclei. 187

C.G.Koutroulos, Phenomenological relativistic study of the Λ -hypernuclei with the Woods-Saxon and other potentials. 193

SESSION 7

Discussion among the participants 199

PREFACE

This volume contains the proceedings of the *First Greek Symposium on Theoretical Nuclear Physics*, held at the University of Thessaloniki on the 24th and 25th of April 1990. An activity of this kind should have been organized much earlier as it has been the case for High Energy or Solid State Physics, for example, but it took place rather late. Such a delay is due to some extent to the limited number of people working in Nuclear Physics.

It has been a pleasure for us to welcome our colleagues in Thessaloniki on the occasion of this Symposium, which gave us and the rest of the participants the opportunity to become acquainted with the work of others with whom we have not "interacted" so far, although they work in the same field and in the same country.

It is hoped that the "menu" of this "Symposium" will "sharpen our appetite" and stimulate our interest in various topics of research and will also inspire us in taking initiatives towards a better communication and "effective interaction" in the domain of Low and Intermediate Energy Nuclear Theory.

It is further hoped that the relevant authorities by looking at these proceedings will have the opportunity to assess the results of the efforts made and will feel it appropriate to support the research in Nuclear Theory and in other fields of basic research. Although undoubtedly applied research and development in areas of vital importance to the society, like in health sciences, should be given top - priority, we think that support to basic research in the right--and in fact very limited--proportion should not be neglected.

The papers in this volume have been reproduced by "photo-offset" from the originals submitted by the authors or, in some cases, from somehow improved versions of them. They contain their talks in the symposium, although in certain cases additional material was included subsequently. Uniformity in the presentation of the texts has been desirable, but in practice this has only partly been achieved. The various contributions have been displayed according to the session in which they had been presented. Almost all the papers refer to the Low and Intermediate Energy Nuclear Theory. There is, however, a little admixture of other topics, such

as Mathematical Physics.

We would like to thank the University of Thessaloniki and our Faculty of Physics for their financial support to the symposium. Thanks are also due to Mrs Theodora Sahini and Dr. K.Ypsilantis for their valuable assistance.

We hope very much that in the future similar Symposia will take place in other parts of the country.

Thessaloniki, March 1991

The local organizing committee