CURRICULUM VITAE

Name	:	Efstathios STILIARIS
Title	:	Assistant Professor
Born	:	4. September 1958 in Arachova Viotias
Nationality	:	Greek
Marital Status	:	Married to Dr. A. Prombona, two children
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Education

- 1976–1981 BS in Physics, Aristotle Univ. of Thessaloniki, Greece
- 1982–1984 MSc in Nuclear Physics, Hahn-Meitner-Institute and Freie Universität Berlin, Germany: *Mass Measurement and Spectroscopy of the Exotic Nucleus* ^{57}Cu*,* (sehr gut)
- 1985–1988 PhD in Physics (Prof. W. von Oertzen), Freie Universität Berlin and Hahn-Meitner-Institute, Berlin, Germany: *Refraction and Nuclear Rainbow Scattering of Heavy Ions,* (magna cum laude)

Positions Held

- 1989 Post-Doc appointment at Hahn-Meitner-Institute, Berlin
- 1990 – 1991 Compulsory military service in Greece – Visitor at the Natl. Research Center of Phys. Science DEMOKRITOS, Tandem-Lab, Athens, Greece
- 1992 – Jun/1995 Research Associate at DESY (Deutsches Elektronen-Synchrotron), Hamburg, Germany (ZEUS Collaboration). For the time period Dec/1992 – Nov/1994 supported by the EU programme HUMAN CAPITAL and MOBILITY.
- Aug/1995 – Sep/1997 Research Associate at Institute of Accelerating Systems and Applications (IASA), Athens, Greece. For the time period Apr/1996 – Mar/1997 supported by the EU programme TMR (Marie-Curie Return Fellowship).
- Oct/1998 – Oct/2001 Staff member of IASA (Researcher C).
- From Oct/2001 Assistant Professor, Physics Department, University of Athens (Division of Nuclear & Particle Physics).

Research

(a) Participation in the **Hadronic Physics** Collaboration OOPS (Out Of Plane Spectroscopy) at the Bates Linear Accelerator Center, M.I.T. (Massachusetts, USA) and the A1 Collaboration at the Institute of Nuclear Physics, Johannes Gutenberg Universitaet (Mainz, Germany).

Research Topics: Study of the $N \rightarrow \Delta$ transition in the proton with high precision inclusive measurements. Parity violation in nuclear systems with low energy photon beams (deuteron photodisintegration)

(b) **Nuclear Medicine**: Construction and improvement of a high resolution and high sensitivity γ-camera for SPECT imaging. Development of new digitization and DAQ techniques based on PCI electronics and SPECT tomographic algorithms with Artificial Neural Networks.

(c) Member of the **High Energy Physics** Collaboration **ZEUS** at the electron-proton collider *HERA* (DESY, Hamburg): Lepton nucleon scattering experiments and analysis of the related processes (deep inelastic scattering, photoproduction and search for exotic states of matter).

Personal contribution to the ZEUS experiment:

- Physics analysis of the obtained data within the *Hadronic Final States* working group.
- Development of the graphical interactive package *BOOST* for the visualization of Lorentz transformations in different frames (LAB, BREIT, HCM), suitable for Jet analysis with several clustering algorithms.
- Organization, maintenance and automatic distribution of the software for the ZEUS offline reconstruction and simulation programmes (Software Management) on heterogeneous systems.

(d) Nuclear Physics with **Heavy Ions** at low and medium energies.

- Investigation of the nuclear potential between heavy ions through the measurement of the nuclear rainbow in the elastic scattering.
- Production and spectroscopy of exotic nuclei with astrophysical applications via multi transfer reactions.
- Study of the charge exchange reaction process with heavy ions in the energy range 10-100 MeV/u, in order to investigate the energy dependence of the two reaction mechanisms involved: the direct charge exchange (one-step process) and the proton-neutron exchange (two-step process).

- Nuclear spectroscopy with heavy ion transfer reactions.

The experiments have been performed at several heavy ion facilities: The Tandem-Cyclotron accelerator *VICKSI* (Hahn-Meitner-Institute, Berlin), the linear collider *UNILAC* (GSI-Darmstadt) and the Cyclotron-Cyclotron combination *GANIL* (Caen, France). Reaction products have been momentum analyzed using magnetic spectrometers with gas and solid state detectors. Special techniques developed:

- Second and third order aberration corrections of the Q3D-magnetic spectrometer to improve the focal plane resolution and development of an energy calibration method for the reaction products based on position and time-of-flight measurements.
- Development of a data reduction system with event compression algorithms for offline analysis.
- Semi-classical analysis of the scattering process with the method of complex trajectories and development of a software package for the complete calculation of the elastic cross section by using the analytical continuation of the classical Hamilton operator into the complex plane.

(e) Accelerator Physics: Electron accelerators, Beam Optics and Control Systems.

- Responsible for the design and construction of the 10 MeV CW Linac "Maquette" Accelerator of IASA with a High Power RF-System. Feasibility study of beam recirculation and energy increase. Development of beam diagnostic systems.
- Importation and adaptation of the *EPICS* (Experimental Physics and Industrial Control System) Control System for the RTM project at IASA, Athens. Definition of the Control System architecture and implementation at the 10 MeV CW Electron Linac, using RISC platforms, VME and CAMAC standards. Development of a standardized wire scanner system with high spatial resolution for measurement of the beam profile and the beam transverse emittance. Realization of an expert system based on artificial neural network for beam characterization.
- Design of a 240 MeV two-stage CW RaceTrack Microtron at the Institute of Accelerating Systems & Applications. Beam optics studies, transverse and longitudinal phase space matching and stability calculations.

Research Interests

Interests in Nuclear Physics with electron beams, $\gamma-$Detection Systems in Nuclear Medicine, Accelerator Physics and Beam Optics.

Publications

- Total Number of Publications in Journals: **51**
- Total Number of Conference Papers: **27** (Reviewed Papers: 9)
- Citation Index (March 2005): **2196**
- Impact Factor: **161.3**

Journal	Number	Impact Factor	Total
Appl. Radiat. Isotopes	1	0.534	0.534
J. Physique	1	1.173	1.173
Nucl. Instr. & Meth. A	7	0.890	6.230
Nucl. Instr. & Meth. B	2	1.016	2.032
Nucl. Phys. A	4	1.988	7.952
Phys. Lett. B	23	3.581	82.363
Phys. Med. Biol.	1	1.542	1.542
Phys. Rev. C	2	2.300	4.600
Phys. Rev. Lett.	2	6.010	12.020
Z.Phys. A - Hadrons & Nuclei	3	1.626	4.878
Z.Phys. C - Particles & Fields	12	3.164	37.968
	58		**161.292**

Recent Publications (from 2002-today)

[1]. E. Stiliaris: *Parity Violation in Nuclear Systems - Experimental Considerations in the Deuteron Photodisintegration with Polarized Photons*, Eur. Phys. J. A **24** (2005) 175-178

[2]. N. Sparveris *et al.,* OOPS Collaboration: *Investigation of the Conjectured Nucleon Deformation at Low Momentum Transfer,* Phys. Rev. Lett. **94** (2005) 022003

[3]. P. Paschalis, N.D. Giokaris, A. Karabarbounis, G.K. Loudos, D. Maintas, C.N. Papanicolas, V. Spanoudaki, Ch. Tsoumpas, E. Stiliaris: *Tomographic Image Reconstruction using Artificial Neural Networks*, Nucl. Instr. and Meth. **A 527** (2004) 211-215

[4]. V. Spanoudaki, N.D. Giokaris, A. Karabarbounis, G.K. Loudos, D. Maintas, C.N. Papanicolas, P. Paschalis, E. Stiliaris: *Design and Development of a Position-Sensitive γ-Camera for SPECT Imaging based on PCI Electronics*, Nucl. Instr. and Meth. **A 527** (2004) 151-156

[5]. N. Giokaris, G. Loudos, D. Maintas, A. Karabarbounis, V. Spanoudaki, E. Stiliaris, S. Boukis, A. Gektin, A. Boyarintsev, V. Pedash, V. Gayshan: *Crystal and Collimator Optimization Studies of a High-Resolution γ-Camera based on a Position Sensitive Photomultiplier,* Nucl. Instr. and Meth. **A 527** (2004) 134-139

[6]. G.K. Loudos, N.D. Giokaris, K. Mainta, N. Sakelios, E. Stiliaris, A. Karabarbounis, C.N. Papanicolas, V. Spanoudaki, K.S. Nikita, N.K. Uzunoglu, S.C. Archimandritis, A.D. Varvarigou, K.N. Stefanis, S. Majewski, A. Weisenberger, R. Pani, D. Maintas: *High-Resolution and High-Sensitivity SPECT Imaging of Breast Phantoms*, Nucl. Instr. and Meth. **A 527** (2004) 97-101

[7]. G.K. Fanourakis, T. Geralis, K. Kousouris, K. Zachariadou, I. Giomataris, N. Giokaris, G. Loudos, M. Lebessi, E. Stiliaris: *The Use of the Micromegas Technology for a New Imaging System*, Nucl. Instr. and Meth. **A 527** (2004) 62-67

[8]. D. Lazaro, I. Buvat, G. Loudos, D. Strul, G. Santin, N. Giokaris, D. Donnarieix, L. Maigne, V. Spanoudaki, S. Styliaris, S. Staelens and V. Breton: *Validation of the GATE Monte Carlo Simulation Platform for Modelling a CsI(Tl) Scintillation Camera dedicated to Small-Animal Imaging,* Phys. Med. Biol. **49** (2004) 271-285

[9]. N.D. Giokaris, G.K. Loudos, D. Maintas, D. Papapanagiotou, K.S. Nikita, N.K. Uzunoglu, A. Karabarbounis, C.N. Papanicolas, E. Stiliaris, S.C. Archimandritis, A.D. Varvarigou, C.N. Stefanis, S. Majewski, A. Weisenberger, R. Pani, F. Scopinaro: *Imaging of Breast Phantoms using a High-Resolution Position Sensitive Photomultiplier Tube,* Nucl. Instr. and Meth. **A 497** (2003) 141-149

[10]. N. Sparveris *et al.,* OOPS Collaboration: *Measurement of the R_{LT} Response Function for π^0 Electroproduction at Q^2=0.070 (GeV/c)^2 in the N→Δ Transition,* Phys. Rev. **C 67** (2003) 058201

[11]. C.Kunz *et al.,* OOPS Collaboration: *Measurement of the Transverse-Longitudinal Cross Sections in the $p(\vec{e},e'p)\pi^0$ Reaction in the Δ Region*, Phys. Lett. **564B** (2003) 21-26

[12]. G.K. Loudos, K.S. Nikita, N.D. Giokaris, E. Styliaris, S.C. Archimandritis, A.D. Varvarigou, C.N. Papanicolas, S. Majewski, A. Weisenberger, R. Pani, F. Scopinaro,

N.K. Uzunoglu, D. Maintas, K. Stefanis: *A 3D High-Resolution Gamma Camera for Radiopharmaceutical Studies with Small Animals,* Applied Radiation and Isotopes **58** (2003) 501-508

[13]. Z.-L. Zhou *et al.,* OOPS Collaboration: *Performance of a Compact Detector Package for the Out-of-Plane Spectrometer System*, Nucl. Instr. and Meth. **A 487** (2002) 365-380

- Main author of [1], [3] and [4]

- Editor in: *"Proceedings of the 2nd International Conference on Imaging Technologies in Biomedical Sciences, ITBS-2003*", Athens & Milos Island, Greece, May 26-30, 2003 - Nuclear Instruments and Methods in Nuclear Research A 527, ELSEVIER
Editors: E. Auffray, P. Lecoq (CERN, Geneva, CH), J. Maublant (Centre Jean Perrin, Clermont-Ferrand, FR), E. Stiliaris (Univ. of Athens & IASA, Athens, GR)

Recent Talks

HADRON DEFORMATION WORKSHOP
MIT, Stata Center, August 7th-9th, 2004
LNS, CAMBRIDGE, MA (USA)
$\gamma^* N \rightarrow \Delta$ Bates Results
E. Stiliaris for the OOPS Collaboration
(invited talk)

International Workshop on Parity Violation and Hadronic Structure (PAVI04)
Laboratoire de Physique Subatomique et de Cosmologie
Grenoble (FRANCE), 8-11 June 2004
Parity Violation in Nuclear Systems:
Experimental Considerations in the Deuteron Photodisintegration with Polarized Photons
(invited talk)

Electromagnetic Interactions with Nucleons and Nuclei (EINN03)
Workshop on Nucleon Form Factors and Parity Violation
Athens & Santorini (GREECE), 6-12 October 2003
Study of the Parity-Non-Conserving (PNC) Force between Nucleons with Low Energy Beams

University of Cyprus
Department of Physics
11 June 2002
Parity-Non-Conservation in Nuclear Forces at Low Energies

CITATION INDEX (MAR-2005)

	Cited Work	Volume	Page	Year	Hits
[1]	J. Physique	C 47	175	1986	2
[2]	Z. Phys. A ATOMIC NUCLEI	326	139	1987	14
[3]	Z. Phys. A ATOMIC NUCLEI	330	227	1988	15
[4]	Nucl. Phys. A	488	C89	1988	12
[5]	Phys. Lett. B	218	299	1989	20
[6]	Phys. Lett. B	223	291	1989	74
[7]	Nucl. Phys. A	519	631	1990	4
[8]	Phys. Rev. C	44	1081	1991	6
[9]	Phys. Lett. B	303	183	1993	23
[10]	Phys. Lett. B	306	158	1993	21
[11]	Phys. Lett. B	306	173	1993	63
[12]	Nucl. Phys. A	555	455	1993	20
[13]	Z. Phys. C PART. FIELDS	59	231	1993	29
[14]	Phys. Lett. B	315	481	1993	228
[15]	Phys. Lett. B	316	207	1993	12
[16]	Phys. Lett. B	316	412	1993	210
[16]	Z. Phys. A ATOMIC NUCLEI	346	189	1993	26
[18]	Phys. Lett. B	322	287	1994	73
[19]	Z. Phys. C PART. FIELDS	63	391	1994	146
[20]	Phys. Lett. B	332	228	1994	88
[21]	Phys. Lett. B	338	483	1994	12
[22]	Z. Phys. C PART. FIELDS	65	379	1995	172
[23]	Z. Phys. C PART. FIELDS	65	627	1995	14
[24]	Phys. Lett. B	342	417	1995	45
[25]	Phys. Lett. B	345	576	1995	82
[26]	Phys. Lett. B	346	399	1995	23
[27]	Phys. Lett. B	348	665	1995	68
[28]	Phys. Lett. B	349	225	1995	33
[29]	Phys. Lett. B	350	120	1995	85
[30]	Z. Phys. C PART. FIELDS	67	81	1995	15
[31]	Z. Phys. C PART. FIELDS	67	93	1995	39
[32]	Phys. Lett. B	354	163	1995	28
[33]	Phys. Lett. B	356	129	1995	59
[34]	Phys. Lett. B	356	601	1995	73
[35]	Z. Phys. C PART. FIELDS	67	227	1995	23
[36]	Phys. Lett. B	363	201	1995	32
[37]	Phys. Rev. Lett.	75	1006	1995	22
[38]	Z. Phys. C PART. FIELDS	68	29	1995	19
[39]	Z. Phys. C PART. FIELDS	68	569	1995	1
[40]	Z. Phys. C PART. FIELDS	69	39	1996	54
[41]	Z. Phys. C PART. FIELDS	69	607	1996	128
[42]	Phys. Lett. B	369	55	1996	39
[43]	Z. Phys. C PART. FIELDS	70	1	1996	21
[45]	Nucl. Instrum. Meth. A	487	365	2002	4
[46]	Appl. Radiat. Isotopes	58	501	2003	7
[47]	Phys. Lett. B	564	21	2003	4
[48]	Phys. Rev. C	67	058201	2003	4
[50]	Phys. Med. Biol.	49	271	2004	4
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