

Eleftheriadis Christos

Associate Professor
Nuclear Physics and Elementary Particle Physics Department

Short Curriculum Vitae October 27th, 2010

Personal Data

Date of birth: December 13th, 1957

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Academic degrees

Graduate in Physics Aristotle University of Thessaloniki (AUTH), 1981

PhD Thesis Aristotle University of Thessaloniki, 1990

Academic positions

Research Assistant, Physics Dept, AUTH 1982

Lecturer, Nuclear Physics and Elementary Particles Division, AUTH, 1992

Assistant Professor, Nuclear Physics and Elementary Particles Division, AUTH, 1999

Associate Professor, Nuclear Physics and Elementary Particles Division, AUTH, 2007

PhDs

Member of the Committee in 5 PhDs

Supervisor in one PhD

Conferences

Participated in more than 30 conferences (in most of them with talk)

Member of the Organizing Committee in 5 Conferences

Research activity

My research interests is in the field of astroparticle physics, as an experimentalist. I am co-author of more than 80 publications in international Journals and 110 publications in Proceedings of International conferences.

- 1) Positron Annihilation Physics
- 2) CPLEAR Experiment at CERN for the study of CP violation in neutral Kaons
- 3) TARC and nTOF experiments at CERN (team leader of AUTH group)
- 4) CAST Experiment at CERN, solar axion search (team leader of AUTH group)
- 5) Astroparticle Physics Group of Aristotle University of Thessaloniki, participation to Cherenkov Telescope Array (CTA)

My publications can be found in the following link:

<http://www.slac.stanford.edu/spires/find/hep/www?rawcmd=FIND+A+ELEFTHERIADIS%2C+C&FORMAT=www&SEQUENCE=ds%28d%29>

Publications of reports

1. **“The TARC Experiment (PS211): Neutron Driven Nuclear Transmutation By Adiabatic Resonance Crossing”**
..,C.Eleftheriadis,.. (The TARC Collaboration)
CERN Yellow Report 99-11 (369 pages)
2. **“Neutron Driven Nuclear Transmutation By Adiabatic Resonance Crossing”**
..,C.Eleftheriadis,.. (The TARC Collaboration)
European Commission, Project Report, EURATOM, EUR 19117 EN (376 pages)
3. **“CERN n-TOF Facility: Performance report”**
E.Chiaveri,..,C.Eleftheriadis,.. (nTOF Collaboration)
CERN-SL-2002-053-ECT, Jan 2003. 149pp.

Publications in international scientific journals

- A1. **“Light losses in BGO and BaF₂ scintillators due to positron states”**
A.Schiltz, C.A.Eleftheriadis, A.Liolios, M.Chardalas, Sp.Dedoussis,
K.Zioutas, St.Charalambous
Nucl.Instr. and Methods A235 (1985), 37
- A2. **“Positron Annihilation in BaF₂ crystals”**
C.A.Eleftheriadis, Sp.Dedoussis, M.Chardalas, St.Charalambous
Crystals Research and Technology, 23 (1988), 437
- A3. **“Positron Annihilation studies in ionic crystals”**
Sp.Dedoussis, G.D.Vassileiadis, A.Liolios, C.Touramanis, M.Chardalas,
C.A.Eleftheriadis, St.Charalambous
Physica Status Solidi (a) 102 (1987), 577
- A4. **“Temperature dependence of Doppler Broadening of the annihilation line in a high-T_c superconductor”**
St.Charalambous, M.Chardalas, Sp.Dedoussis, C.A.Eleftheriadis, A.K.Liolios,
D.Niarchos
Physics Letters A 128 (1988), 97
- A5. **“Parameters affecting three-photon positron annihilation spectrometers”**
St.Charalambous, M.Chardalas, Sp.Dedoussis, C.A.Eleftheriadis, A.K.Liolios
Nucl.Instr. and Methods A300 (1991), 297
- A6. **“Point Defects in Neutron Transmutation Doped Czochralski-grown Si studied by Positron Annihilation”**
X.T.Meng, A.K.Liolios, M.Chardalas, Sp.Dedoussis, C.A.Eleftheriadis,
St.Charalambous
Phys.Lett.A 157 (1991), 73
- A7. **“Positron annihilation measurements in the YBa₂Cu₃Cd_xO_y system”**
A.Liolios, M.Chardalas, Sp.Dedoussis, C.A.Eleftheriadis, L.Papadimitriou,
E.Mouhtari, C.Nikolopoulos, St.Charalambous



- Materials Science Forum, 105-110 (1992), 1129
- A8. **“Point defects in Neutron Transmutation Doped CZ Silicon”**
 M.Chardalas, Sp.Dedoussis, A.Liolios, C.A.Eleftheriadis, St.Charalambous,
 X.T.Meng
 Materials Science Forum, 105-110 (1992), 921
- A9. **“Saturation Magnetization and Positron Annihilation in dependence of the composition of Fe₇₈-XCoXSi₉B₁₃ Amorphous alloys”**
 A.Liolios, G.Stergioudis, Sp.Dedoussis, M.Chardalas, C.A.Eleftheriadis,
 P.Rentzeperis, I.Yakinthos, St.Charalambous
 Zeitschrift fur Metallkunde 83 (1992), 794
- A16. **“Annealing behaviour of defects in Neutron Transmutation Doped Silicon”**
 X.T.Meng, St.Charalambous, M.Chardalas, S.Dedoussis, C.A.Eleftheriadis,
 A.K.Liolios
 Rad. Eff. and Def. in Solids, 133 (1995), 79-101
- A26. **“Measurement of the oPs decay rate using an energy and time spectrometer”**
 C.Nikolopoulos, Sp.Dedoussis, M.Chardalas, C.A.Eleftheriadis
 J.Radioanalytical.Nucl.Chem. 211 No 1 (1996), 145-152.

The above publications are related to positron physics. The following are related to particle physics.

- A10. **“Recent results from the CPLEAR Experiment”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Nuclear Physics A 558 (1993), 437c - 448c
- A11. **“A study of T Violation via the Semileptonic Decays of neutral kaons in CPLEAR”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Nuclear Physics A 558 (1993), 449c - 456c
- A12. **“Two pion Bose - Einstein correlations in pp annihilations at rest”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Nuclear Physics A 558 (1993), 43c - 52c
- A13. **“Recent results on CP Violation from the CPLEAR Experiment”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Nuclear Physics B (Proc. Suppl.) 31 (1993), 196 - 199
- A14. **“Bose - Einstein correlations in pp annihilations at rest”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Zeitschrift f. Physik C 63 (1994) p.541-547
- A15. **“Inclusive measurement of anti-p annihilation at rest in gaseous hydrogen to final states containing rho and f₂”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Zeitschrift f. Physik C 65, Vol. 2 (1995) p. 199-205
- A17. **“Tests of CPT symmetry and quantum mechanics with experimental data from CPLEAR”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration) and J.Ellis et al.,
 Phys.Lett.B 364 (1995), 239-245
- A18. **“Measurement of KL-KS mass difference using semileptonic decays of**



- tagged neutral kaons”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Phys.Lett. B 363 (1995) 237.
- A19. **“Measurement of the CP violation parameter η^{\pm} using tagged K^0 and \bar{K}^0 ”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Phys.Lett. B 363 (1995) 243.
- A20. **“Experimental determination of the energy generated in nuclear cascades by a high energy beam”**
 S.Andriamonje, ..., C.A.Eleftheriadis, ..
 Physics Letters B 348 (1995) 697-709
- A21. **“First observation of a particle-antiparticle asymmetry in the decay of neutral kaons into $\pi^0 \pi^0$ ”**
 R. Adler, ..., C.A.Eleftheriadis, .. (CPLEAR collaboration),
 Zeitschrift fur Physik C70, nr 2 (1996), 211.
- A22. **“Evaluation of the phase of the CP violation parameter η^{\pm} and the $K_L K_S$ mass difference from a correlation analysis of different experiments”**
 R.Adler, ...,C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Phys.Lett.B 369 (1996), 367-371
- A23. **“Search for CP violation in the decay of neutral kaons to $\pi^+ \pi^- \pi^0$ ”**
 R.Adler, ..., C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Phys.Lett.B 370 (1996), 167-173
- A24. **“Observation of the CP-conserving $K_S \rightarrow \pi^+ \pi^- \pi^0$ decay amplitude”**
 R.Adler, ..., C.A.Eleftheriadis, .. (CPLEAR Collaboration)
 Phys.Lett.B 374 (1996), 313-318
- A25. **“The CPLEAR Detector at CERN”**
 R. Adler, ..., C.A.Eleftheriadis, .. (CPLEAR collaboration)
 Nucl. Instrum. Methods A 379 (1996), 76.
- A27. **“Experimental measurement of the $K_S K_S / K_S K_L$ ratio in antiproton annihilations at rest in gaseous hydrogen at 15 and 27 bar”**
 R. Adler, ..., C.A.Eleftheriadis, .. (CPLEAR collaboration)
 Phys.Lett.B 403 (1997) 383
- A28. **“CPLEAR results on the CP parameters of neutral kaons decaying to $\pi^+ \pi^- \pi^0$ ”**
 R. Adler, ..., C.A.Eleftheriadis, .. (CPLEAR collaboration)
 Phys.Lett.B 407 (1997) 193.
- A29. **“Direct determination of two pion correlations for anti-p p $\rightarrow 2\pi^+ 2\pi^-$ annihilation at rest”**
 A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
 Eur.Phys.J.C1 (1997), 139.
- A30. **“An upper limit for branching ratio of the decay $K_S \rightarrow e^+ e^-$ ”**
 A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
 Phys.Lett.B 413 (1997), 232.
- A31. **“Measurement of the neutral Kaon regeneration amplitude in carbon at momenta below 1 GeV/c”**
 A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)



- Phys.Lett.B 413 (1997), 422.
- A32. **“The CPLEAR Experiment at CERN”**
R.Adler, ..., C.A.Eleftheriadis, .. (CPLEAR collaboration)
Nucl.Phys.B(Proc.Suppl.) 59 (1997), 182
- A33. **“Measurement of the CP-Violation parameter η_{00} using tagged \bar{K}^0 and K^0 ”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Lett.B 420 (1998), 191.
- A34. **“An EPR experiment testing the non-separability of the K^0 \bar{K}^0 wave function”**
A.Apostolakis, ..., C.A.Eleftheriadis, ..(CPLEAR Collaboration)
Phys.Lett.B 422 (1998), 339.
- A35. **“Search for CP Violation in the decay of tagged K^0 and \bar{K}^0 to $\pi^0\pi^0\pi^0$ ”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Lett.B 425 (1998), 391.
- A36. **“The neutral kaon decays to $\pi^+\pi^-\pi^0$: a detailed analysis of the CPLEAR data”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Eur. Phys.J. C5 (1998) 389
- A37. **“Measurement of the KL-KS mass difference using semileptonic decays of tagged neutral kaons”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Lett.B 444 (1998) 38, CERN-EP-98-152, Oct. 1998
- A38. **“First direct observation of Time Reversal noninvariance in the neutral kaon system”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Lett.B 444 (1998) 43, CERN-EP-98-153, Oct. 1998
- A39. **“A determination of the CPT Violation parameter $\text{Re}(\delta)$ from the semileptonic decay of strangeness tagged neutral kaons”**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Lett.B 444 (1998) 52, CERN-EP-98-154, Oct. 1998
- A40. **“Pion correlations and resonance effects in anti-p p annihilation at rest to $2\pi^+2\pi^-\pi^0$ ”**
A.Apostolakis, ..., C.A.Eleftheriadis, ..(CPLEAR Collaboration)
Eur.Phys.J.C 6, (1999) 437
- A41. **"Dispersion relation analysis of the neutral kaon regeneration amplitude in carbon"**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Eur. Phys. J. C10 (1999) 19-25.
- A42. **"Tests of the equivalence principle with neutral kaons"**
A. Apostolakis,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys. Lett. B 452 (1999) 425-433.
- A43. **"Determination of the T and CPT violation parameters in the neutral kaon system using the Bell-Steinberger relation and data from CPLEAR"**
A. Apostolakis,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys. Lett. B 456 (1999) 297-303.
- A44. **“Experimental verification of neutron phenomenology in lead and**



- transmutation by adiabatic resonance crossing in accelerator driven systems”**
H.Arnoold, ..., C.A.Eleftheriadis, ..
Phys. Lett. B458 (1999), 167-180
- A45. **"A determination of the CP violation parameter η_{+-} from the decay of strangeness-tagged neutral kaons"**
A. Apostolakis, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Phys. Lett. B 458 (1999) 545-552.
- A46. **" $K^0 - \bar{K}^0$ mass and decay-width differences: CPLEAR evaluation"**
A.Angelopoulos, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Phys. Lett. B 471 (1999) 332-338.
- A47. **"Measurement of the energy dependence of the form-factor f_+ in K_{e3}^0 decay"**
A. Apostolakis, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Phys. Lett. B 473 (2000) 186-192.
- A48. **"A detailed description of the analysis of the decay of neutral kaons to $\pi^+\pi^-$ in the CPLEAR experiment"**
A. Apostolakis, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Eur. Phys. J. C18 (2000) 41-55.
- A49. **"Experimental verification of neutron phenomenology in lead and of transmutation by adiabatic resonance crossing in accelerator driven systems: A summary of the TARC Project at CERN"**
A. Abanades, ..., C.A.Eleftheriadis, ... (PS213 Collaboration)
NIM A 463 (2001) 586-592.
- A50. **"T-violation and CPT-invariance measurements in the CPLEAR experiment: a detailed description of the analysis of neutral-kaon decays to $e\pi\nu$ "**,
A.Angelopoulos, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Eur. Phys. J. C22 (2001) 55-79.
- A51. **" $K^0 \leftrightarrow \bar{K}^0$ transitions monitored by strong interactions: a new determination of the KL-KS mass difference"**
A.Angelopoulos, ..., C.A.Eleftheriadis, ... (CPLEAR Collaboration)
Phys. Lett. B 503 (2001) 49-57.
- A52. **"Mapping of the thermal neutron distribution in the lead block assembly of the PS-211 experiment at CERN, using Thermoluminescence and Nuclear track detectors"**
Savvidis E. Eleftheriadis C. A. and Kitis, G. (PS-211 Collaboration) Radiat. Prot. Dosimetry 101 (2002) 103-106.
- A53. **"The CERN Axion Solar Telescope (CAST).**
C.E. Aalseth, ..., C. Eleftheriadis, ... (CAST Collaboration)
Nucl.Phys.Proc.Suppl.110:85-87,2002
- A54. **"Results from the TARC experiment: spallation neutron phenomenology in lead and neutron-driven nuclear transmutation by adiabatic resonance crossing"**



- A. Abanades,..., C.A.Eleftheriadis,...(PS213 Collaboration)
NIM A 478 (2002) 577-730.
- A55. **"Physics at CPLEAR"**
A.Angelopoulos,...,C.A.Eleftheriadis,...(CPLEAR Collaboration)
Phys.Rept.374:165-270,2003
- A56. **"The CERN Axion Solar Telescope (CAST): status and prospects"**
I.G. Irastorza, .., C. Eleftheriadis, .. (CAST Collaboration)
Nucl.Phys.Proc.Suppl.114:75-80, 2003
- A57. **"New experimental validation of the pulse height weighting technique for capture cross section measurements"**
U. Abbondano,..., C.A.Eleftheriadis,...(nTOF Collaboration)
NIM A 521 (2004) 454-467
- A58. **"Measurement of the nTOF beam profile with a micromegas detector"**
J.Pancin, ..., U. Abbondano,..., C.A.Eleftheriadis,...(nTOF Collaboration)
NIM A 524 (2004) 102-114
- A59. **"Time-energy relation of the n_TOF neutron beam: energy standards revisited"**
G.Lorusso, ..., U. Abbondano,..., C.A.Eleftheriadis,...(nTOF Collaboration)
NIM A 532 (2004) 622-630
- A60. **"First results from the CERN Axion Solar Telescope (CAST)"**
K.Zioutas, .., C. Eleftheriadis, .. (CAST Collaboration)
Phys. Rev. Lett. 94, 121301 (2005), hep-ex/0411033
- A61. **"The CERN Axion Solar Telescope (CAST): An update"**
S.Andriamonje, .., C. Eleftheriadis, .. (CAST Collaboration)
Nucl.Phys.B, Proc.Suppl.138 (2005) 41
- A62. **"Neutron capture cross section of Th-232 measured with the n_TOF facility at CERN in the unresolved region up to 1 MeV"**
G.Aerts,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C73:054610,2006
- A63. **"New measurement of neutron capture resonances in Bi-209"**
C.Domingo-Pardo,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C74:025807,2006
- A64. **"Resonance capture cross section of Pb-207"**
C.Domingo-Pardo,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C74:055802,2006
- A65. **"First results from the CAST experiment"**
T. Dafni,..., C.Eleftheriadis,.. (CAST Collaboration)
J.Phys.Conf.Ser.39:117-119,2006
- A66. **"Neutron cross section measurements at n-TOF for ADS related studies"**
P.F.Mastinu,...,C.Eleftheriadis,.. (nTOF Collaboration)
J.Phys.Conf.Ser.41:352-360,2006
- A67. **"Measurement of the neutron capture cross section of the s-only isotope Pb-204 from 1-eV to 440-keV"**
C.Domingo-Pardo,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C75:015806,2007
- A68. **"The 139La(n, γ) cross section: Key to the onset of the s-process"**



- R.Terlizzi,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C75:035807,2007
- A69. **“An improved limit on the axion–photon coupling from the CAST experiment”**
S.Andriamonje, ..., C. Eleftheriadis, .. (CAST Collaboration)
J. Cosmol. Astropart. Phys. JCAP04(2007)010
- A70. **“The X-ray telescope of CAST”**
M.Kuster, .., C.Eleftheriadis, ..et al.
New Journal of Physics 9 (2007)
- A71. **“Prospects for the CERN Axion Solar Telescope Sensitivity to 14.4-keV Axions”**
K.Jakovic, ..., C.Eleftheriadis, ..(CAST Collaboration)
Nucl.Instrum.Meth.A580:37-39,2007
- A72. **“Measurement of the radiative neutron capture cross section of Pb-206 and its astrophysical implications”**
C.Domingo-Pardo,...,C.Eleftheriadis,.. (nTOF Collaboration)
Phys.Rev.C76:045805,2007.
- A73. **“Neutron capture cross section of Zr-90: Bottleneck in the s-process reaction flow”**
G.Tagliente, ..., C.Eleftheriadis, .. (n_TOF Collaboration)
Phys.Rev.C77:035802, 2008.
- A74. **“Nuclear physics for the Re/Os clock”**
M.Mosconi, .., C.Eleftheriadis, ..(n_TOF Collaboration)
J.Phys.G35:014015,2008.
- A75. **“The measurement of the Pb-206 (n, gamma) cross section and stellar implications”**
C.Domingo-Pardo,...,C.Eleftheriadis,.. (n_TOF Collaboration)
J.Phys.G35:014020,2008
- A76. **“Probing eV-scale axions with CAST”**
E.Arik, .., C. Eleftheriadis, .. (CAST Collaboration)
JCAP 0902:008,2009
- A77. **“Experimental study of the Zr-91 (n, gamma) reaction up to 26 keV”**
G.Tagliente, ..., C.Eleftheriadis, .. (n_TOF Collaboration)
Phys.Rev.C78:045804,2008.
- A78. **“High-accuracy U-233 (n,f) cross-section measurement at the white-neutron source n_TOF from near-thermal to 1 MeV neutron energy”**
M.Calviani, .., C.Eleftheriadis, .. (n_TOF Collaboration)
Phys.Rev.C80:044604,2009.
- A79. **“Au-197 (n, gamma) cross section in the resonance region”**
C. Massimi, .., C.Eleftheriadis, ..(n_TOF Collaboration)
Phys.Rev.C81:044616,2010.
- A80. **“The Zr-92 (n, gamma) reaction and its implications for stellar nucleosynthesis”**
[G. Tagliente](#), .., C.Eleftheriadis, ..(n_TOF Collaboration)
Phys.Rev.C81:055801,2010.



- A81. **“Neutron physics of the Re/Os clock. 3. Resonance analyses and stellar (n, gamma) cross sections of Os-186, Os-187, Os-188”**
K. Fujii, ..., C.Eleftheriadis, ..(n_TOF Collaboration)
Phys.Rev.C82:015804,2010.
- A82. **“Neutron physics of the Re/Os clock. 1. Measurement of the (n, gamma) cross sections of Os-186, Os-187, Os-188 at the CERN n_TOF facility”**
[M. Mosconi](#), ..., C.Eleftheriadis, ..(n_TOF Collaboration)
Phys.Rev.C82:015802,2010
- A83. **“Neutron-induced fission cross section of U-234 and Np-237 measured at the CERN Neutron Time-of-Flight (n_TOF) facility”**
[C. Paradela](#), ..., C.Eleftheriadis, ..(n_TOF Collaboration)
Phys.Rev.C82:034601,2010.

