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CURRICULUM VITAE (November 2005)

NAME: Loukas Sakelliou

ACADEMIC POSITION: University of Athens, Physics Dept., Nuclear Physics & Elementary Particle Physics Section, Associate Professor
 Institute of Accelerating Systems and Applications, Dosimetry Laboratory, Director

ACADEMIC EDUCATION: 1969 Physics Degree, University of Athens
 1982 Ph.D., University of Athens

TEACHING ACTIVITIES: Member of the founding board of the MSc in Medical Physics of the Physics Dept. of the University of Athens in collaboration with the Medical Dept. of the Universities of Athens, Ioannina, Thessalonica, Thrace and Crete, the Greek National Research Centre "Democritus" and the Greek Atomic Energy Committee
 Author of lecture notes in Atomic, Nuclear, Health and Medical Physics. Co-author in "The Physics of Modern Brachytherapy for Oncology, D. Baltas, L. Sakelliou and N. Zamboglou," by appointment of Taylor & Francis Group LLC: [Table of contents](#)

Courses currently held: Atomic and Nuclear Physics (core course, MSc in Medical Physics, University of Athens)
 Nuclear Physics (core course, BSc in Physics, Physics Dept., University of Athens)
 Modern Physics (core course, BSc in Physics, Physics Dept., University of Athens)
 Health Physics, Medical Physics (elective courses, BSc in Physics, Physics Dept., University of Athens)

PhD dissertations completed (major supervisor):
 "Development of calculation and experimental dosimetry techniques in Radiation Physics and Radiation Therapy" E. Pantelis, 2005
 "Applications of Magnetic Resonance Imaging based dosimetry in Radiotherapy" E. Pappas, 2004
 "Development of tissue mimicking gels for radiotherapy dosimetry using Magnetic Resonance Imaging," P. Kipourous, 2004
 "Dosimetry in contemporary radiotherapy applications," P. Papagiannis, 2003
 "Analytical dosimetry in modern brachytherapy applications," P. Karaikos, 2001
 "The effect of particle radiation exposure on DNA eucaryotic cells," A. Georgakilas, 1998
 "Indoor γ -radiation measurements in Greece," K. Sakellariou, 1994
 "Microdosimetry calculations and measurements," G. Zarris, 1993
 "An experimental study of the CP symmetry violation," K. Sarigiannis, 1993

RESEARCH ACTIVITIES:
 Major research interest: Current research interest is in the field of Medical Physics with main focus on:

- Monte Carlo modelling of medical radiation sources for the generation of dosimetry data for use in clinical practise (pubs.2, 15, 17, 22, 28, 36)
- radiation therapy treatment planning amendment (pubs. 1, 6, 8, 19, 25, 34) and development of analytical dosimetry models guided by Monte Carlo dosimetry (pubs. 14, 20, 21, 39, 40) for incorporating bounded geometry, inhomogeneity and shielding material effects in commercial treatment

planning systems in collaboration with the Strahlenklinik, Stadtische Kliniken, Johan Wolfgang Universitat Frankfurt (<http://www.klinikum-offenbach.de>)

- treatment verification in contemporary radiation therapy techniques using polymer gel dosimeters (pubs. 3, 4, 5, 7, 9, 10, 13, 17, 27, 29, 33) through an ongoing research collaboration with the Technical University of Lodz (www.mitr.p.lodz.pl/biomat/info_s.html).

Research experiments:

High Energy Physics

(1987- 2000) CPLEAR, experiment at CERN (searching for CP violation)

(1982-1987) PS183 experiment at CERN (searching for narrow states in $\bar{p}p$ annihilation)

Nuclear Technology

(1994 -) CERN-projects “Energy Amplifier” (combines a sub-critical reactor with a particle accelerator to produce clean and safe energy) and TARC (incineration of long-lived nuclear waste/ by-products for medical applications)

Research Grants and collaborations:

Greek General Secretariat of Research and Technology Grants:

99ΕΔ90, 9701(ΕΠΕ)920, 91ΕΔ107, 1088/95, ΗΡΑΚΛΕΙΤΟΣ (ΕΠΕΑΕΚ II), ΠΥΘΑΓΟΡΑΣ II (ΕΠΕΑΕΚ II)

EU grants:

EEC 817-0033C, EEC FIPCT950011, EU F141-CT96-009, FIS5-1999-00079

MITTUG European Commission Grant IST-1999-10618

International Atomic Energy Agency Research Agreement 6021/CF 1993

Poland-Greece joint Research and Technology program 2013555

Czech-Greece joint Research and Technology program

Research Supports:

Paid contracts for the Monte Carlo/TLD dosimetry of:

- IsoSeed® model I25.S17, new ^{125}I interstitial brachytherapy seed, Bebig GmbH.
- Shimadzu Co 60 High Dose Rate radioactive sources, Shimadzu Corp., Japan
- microSelectron Pulsed Dose Rate Ir^{192} radioactive source, Nucletron B.V., Veenendaal, The Netherlands
- selectSeed I^{125} radioactive seed source, Nucletron B.V., Veenendaal, The Netherlands
- VariSource High Dose Rate Ir^{192} radioactive source, Varian Oncology Systems, Palo Alto, USA

LIST OF PUBLICATIONS

(total: **97** refereed / peer reviewed papers, citations: 967 according to the ISI Web of Science)

Following is a title list of refereed / peer reviewed papers past 2000 in reverse chronological order

1. **A dosimetric comparison of ^{169}Yb versus ^{192}Ir for HDR prostate brachytherapy**, Lymperopoulou G, Papagiannis P, Sakelliou L, Milickovic N, Giannouli S and Baltas D, *Medical Physics*, Volume 32, Issue 12, Dec. 2005, Pages 3832-3842. [Abstract](#)
2. **Monte Carlo and thermoluminescence dosimetry of the new IsoSeed® model I25.S17 ^{125}I interstitial brachytherapy seed**, Lymperopoulou G, Papagiannis P, Sakelliou L, Karaiskos P, Sandilos P, Przykutta A, and Baltas D, *Medical Physics*, Volume 32, Issue 11, Nov. 2005, Pages 3313-3317. [Abstract](#)
3. **An evaluation of the TSE MR sequence for time efficient data acquisition in polymer gel dosimetry of applications involving high doses and steep dose gradients**, Baras P, Seimenis I, Sandilos P, Vlahos L, Bieganski T, Georgiou E, Pantelis E, Papagiannis P and Sakelliou L, *Medical Physics*, Volume 32, Issue 11, Nov. 2005, Pages 3339-3345. [Abstract](#)

4. **Polymer gel dosimetry close to an ^{125}I interstitial brachytherapy seed**, Pantelis E, Lymperopoulou G, Papagiannis P, Sakelliou L, Stiliaris E, Sandilos P, Seimenis I, Kozicki M and Rosiak J M, , *Physics in Medicine and Biology*, Volume 50, issue 18, Sep. 2005, pages 4371 – 4384. [Abstract](#)
5. **Three-dimensional dose verification of the clinical application of gamma knife stereotactic radiosurgery using polymer gel and MRI**, Papagiannis P, Karaiskos P, Kozicki M, Rosiak J M, Sakelliou L, Sandilos P, Seimenis I and Torrens M, *Physics in Medicine and Biology*, Volume 50, issue 9, Apr. 2005, pages 1979 – 1990. [Abstract](#)
6. **The effect of finite patient dimensions and tissue inhomogeneities on dosimetry planning of ^{192}Ir HDR brachytherapy: a Monte Carlo dose verification study**, Pantelis E, Papagiannis P, Karaiskos P, Angelopoulos A, Anagnostopoulos G, Baltas D, Zamboglou N and Sakelliou L, *International Journal of Radiation Oncology*Biophysics*, Volume 61, Issue 5, Apr. 2005, Pages 1596-1602. [Abstract](#)
7. **Dose verification of single shot gamma knife applications using VIPAR polymer gel and MRI**, Karaiskos P, Petrokokkinos L, Tatsis E, Angelopoulos A, Baras P, Kozicki M, Papagiannis P, Rosiak J M, Sakelliou L, Sandilos P and Vlachos L, *Physics in Medicine and Biology*, Volume 50, issue 6, Mar. 2005, pages 1235–1250. [Abstract](#)
8. **A Monte Carlo dosimetry study of vaginal ^{192}Ir brachytherapy applications with a shielded cylindrical applicator set**, Lymperopoulou G, Pantelis E, Papagiannis P, Rozaki-Mavrouli E, Sakelliou L, Baltas D and Karaiskos P, *Medical Physics*, Volume 31, Issue 11, Nov. 2004, Pages 3080-3086. [Abstract](#)
9. **Polymer gel water equivalence and relative energy response with emphasis on low photon energy dosimetry in brachytherapy**, Pantelis E, Karlis A K, Kozicki M, Papagiannis P, Sakelliou L and Rosiak J M, *Physics in Medicine and Biology*, Volume 49, issue 15, Aug. 2004, pages 3495 – 3514. Included in IOP Select <http://Select.iop.org> and Highlights of 2004 www.iop.org/journals/pmb/highlights. [Abstract](#)
10. **Dose verification in clinical IMRT prostate incidents**, Sandilos P, Angelopoulos A, Baras P, Dardoufas K, Karaiskos P, Kipouros P, Kozicki M, Rosiak JM, Sakelliou L, Seimenis I and Vlahos L, *International Journal of Radiation Oncology*Biophysics*, Volume 59, Issue 5, Aug. 2004, Pages 1540-1547. [Abstract](#)
11. **The effect of patient inhomogeneities in oesophageal Ir-192 HDR brachytherapy: a Monte Carlo and an analytical dosimetry study**, Anagnostopoulos G, Baltas D, Pantelis E, Papagiannis and Sakelliou L, *Physics in Medicine and Biology*, Volume 49, Issue 12, June 2004, Pages 2675–2685. [Abstract](#)
12. **Evaluation of a TG-43 compliant analytical dosimetry model in clinical ^{192}Ir HDR brachytherapy treatment planning and assessment of the significance of source position and catheter reconstruction uncertainties**, Pantelis E, Papagiannis P, Anagnostopoulos G, Baltas D, Karaiskos P, Sandilos P and Sakelliou L, *Physics in Medicine and Biology*, Volume 49, Issue 1, Jan. 2004, Pages 55-67. [Abstract](#)
13. **3D dose verification in ^{192}Ir HDR prostate monotherapy using polymer gels and MRI**, Kipouros P, Papagiannis P, Sakelliou L, Karaiskos P, Sandilos P, Baras P, Seimenis I, Kozicki M, Anagnostopoulos G and Baltas D, *Medical Physics*, Volume 30, Issue 8, Aug. 2003, Pages 2031-2039. [Abstract](#)
14. **An analytical dosimetry model as a step towards accounting for inhomogeneities and bounded geometries in ^{192}Ir brachytherapy treatment planning**, Anagnostopoulos G, Baltas D, Karaiskos P, Pantelis E, Papagiannis P and Sakelliou L, *Physics in Medicine and Biology*, Volume 48, Issue 11, Jun.2003, Pages 1625-1647. [Abstract](#)
15. **Monte Carlo dosimetry of ^{60}Co HDR brachytherapy sources**, Papagiannis P, Angelopoulos A, Pantelis E, Sakelliou L, Karaiskos P and Shimizu Y, *Medical Physics*, Volume 30, Issue 4, Apr.2003, Pages 712-721. [Abstract](#)
16. **Physics at CPLEAR**, CPLEAR Collaboration (Angelopoulos A et al.), *Physics Reports*, Volume 374, Issue 3, Jan.2003, Pages 165-270. [Abstract](#)
17. **Monte Carlo dosimetry of a new ^{192}Ir pulsed dose rate brachytherapy source**, Karaiskos P, Angelopoulos A, Pantelis E, Papagiannis P, Sakelliou L, Kouwenhoven E and Baltas D, *Medical Physics*, Volume 30, Issue 1, Jan.2003, Pages 9-16. [Abstract](#)

18. **Polymer gel dosimetry using a three-dimensional MRI acquisition technique**, Baras P, Seimenis I, Kipouros P, Papagiannis P, Angelopoulos A, Sakelliou L, Pappas E, Baltas D, Karaikos P, Sandilos P and Vlachos L, *Medical Physics*, Volume 29, Issue 11, Nov.2002, Pages 2505-2516. [Abstract](#)
19. **Dosimetry Comparison of ^{192}Ir Sources**, Papagiannis P, Angelopoulos A, Pantelis E, Sakelliou L, Baltas D, Karaikos P, Sandilos P and Vlachos L, *Medical Physics*, Volume 29, Issue 10, Oct. 2002, Pages 2239-2246. [Abstract](#)
20. **On the dosimetric accuracy of a Sievert integration model in the proximity of ^{192}Ir HDR sources**, Pantelis E, Baltas D, Dardoufas K, Karaikos P, Papagiannis P, Rosaki-Mavrouli H and Sakelliou L, *International Journal of Radiation Oncology*Biology*Physics*, Volume 53, Issue 4, Jul.2002, Pages 1071-1084. [Abstract](#)
21. **Dosimetric calculations and VIPAR polymer gel dosimetry close to the microSelectron HDR**, Kipouros P, Anagnostopoulos G, Angelopoulos A, Baltas D, Baras P, Drolapas A, Karaikos P, Pantelis E, Papagiannis P, Sakelliou L and Seimenis I, *Zeitschrift für Medizinische Physik*, Volume 12, Issue 4, Dec. 2002, pages 252-259. [Abstract](#)
22. **Thermoluminescent dosimetry of the selectseed ^{125}I interstitial brachytherapy seed**, Anagnostopoulos G, Baltas D, Karaikos P, Sandilos P, Papagiannis P and Sakelliou L, *Medical Physics*, Volume 29, Issue 5, May 2002, Pages 709-716. [Abstract](#)
23. **Results from the TARC experiment: spallation neutron phenomenology in lead and neutron-driven nuclear transmutation by adiabatic resonance crossing**, TARC Collaboration (Abánades A. et al.), *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, Volume 478, Issue 3, Feb.2002, Pages 577-730. [Abstract](#)
24. **T-violation and CPT-invariance measurements in the CPLEAR experiment: a detailed description of the analysis of neutral-kaon decays to $e\pi\nu$** , CPLEAR Collaboration (Angelopoulos A et al.), *European. Physical Journal*, Volume C22, Issue 1, Sep.2001, Pages 55-79. [Abstract](#)
25. **Beta versus gamma dosimetry close to Ir-192 brachytherapy sources**, Baltas D, Karaikos P, Papagiannis P, Sakelliou L, Loeffler E, and Zamboglou N, *Medical Physics*, Volume 28, Issue 9, Sep.2001, Pages 1875-1882. [Abstract](#)
26. **Bladder Wall dosimetry for ^{131}I Administered Activities**, Likoka E, Angelopoulos A, Baras P, Karaikos P, Pantelis E, Sakelliou L, Dimitriou P, *Radiation Protection Dosimetry*, Volume 95, Issue 2, 2001, Pages 106-116. [Abstract](#)
27. **Wide dynamic dose range of VIPAR polymer gel dosimetry**, Kipouros P, Pappas E, Baras P, Hatzipanayoti D, Karaikos P, Sakelliou L, Sandilos P, Seimenis I, *Physics in Medicine and Biology*, Volume 46, Issue 8, Aug. 2001, Pages 2143-2159. [Abstract](#)
28. **Monte Carlo dosimetry of the selectSeed ^{125}I interstitial brachytherapy seed**, Karaikos P, Papagiannis P, Sakelliou L, Anagnostopoulos G, and Baltas D, *Medical Physics*, Volume 28, Issue 8, Aug.2001, Pages 1753-1760. [Abstract](#)
29. **Dosimetry close to an Ir HDR source using N-vinylpyrrolidone based polymer gels and magnetic resonance imaging**, Papagiannis P, Pappas E, Kipouros P, Angelopoulos A, Sakelliou L, Baras P, Karaikos P, Seimenis I, Sandilos P, Baltas D, *Medical Physics*, Volume 28, Issue 7, Jul. 2001, Pages 1416-1426. [Abstract](#)
30. **Dielectric and UV Spectrophotometric Study of Physicochemical Effects of Ionizing Radiation on Mammalian Macromolecular DNA**, Georgakilas A.G, Konsta A.A, Sideris E.G.; Sakelliou L *IEEE Transactions on Dielectrics and Electrical Insulation*, Volume 8, Issue 3, Jun.2001, Pages 549-554. [Abstract](#)
31. **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**, (Abánades A et al.), *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, Volume 463, Issue 3, May2001, Pages 586-592. [Abstract](#)

32. $\kappa^0 \Leftrightarrow \bar{\kappa}^0$ transitions monitored by strong interactions: a new determination of the KL KS mass difference, CPLEAR Collaboration (Angelopoulos A et al.), *Physics Letters B*, Volume 503, Issue 1-2, Mar.2001, Pages 49–57. [Abstract](#)
33. Narrow stereotactic beam profile measurements using N-vinylpyrrolidone based polymer gels and magnetic resonance imaging, Pappas E, Seimenis I, Angelopoulos A, Georgolopoulou P, Kamariotaki-Papargopoulou M, Maris T, Sakelliou L, Sandilos P, Vlachos L, *Physics in Medicine and Biology*, Volume 46, Issue 3, Mar.2001, Pages 783-797. [Abstract](#)
34. Dosimetry of ^{192}Ir wires for LDR interstitial brachytherapy following the AAPM TG-43 dosimetric formalism, Karaiskos P, Papagiannis P, Angelopoulos A, Sakelliou L, Baltas D, Sandilos P, Vlachos L, *Medical Physics*, Volume 28, Issue 2, Feb.2001, Pages 156-166. [Abstract](#)
35. A detailed description of the analysis of the decay of neutral kaons to $\pi^+\pi^-$ in the CPLEAR experiment, CPLEAR Collaboration (Apostolakis A et al.), *European. Physical Journal*, Volume C18, Issue 1, Dec.2000, Pages 41-55. [Abstract](#)
36. Monte Carlo dosimetry of a new Ir high dose rate brachytherapy source, Angelopoulos A, Baras P, Sakelliou L, Karaiskos P, Sandilos P, *Medical Physics*, Volume 27, Issue 11, Nov.2000, Pages 2521-2527. [Abstract](#)
37. Radiation Dose to the Bladder Wall from Technetium-99m Accumulated in the Bladder Contents, Karaiskos P, Angelopoulos A, Baras P, Dimitriou P, Frantzis A, Sakelliou L, *Radiation Protection Dosimetry*, Volume 87, issue 4, 2000, Pages 281-286. [Abstract](#)
38. Alpha-particle-induced changes in the stability and size of DNA, Georgakilas A.G, Haveles K.S, Sophianopoulou V, Sakelliou L, Zarris G, Sideris E.G, *Radiation Research*, Volume 153, Issue 3, Mar.2000, Pages 258-262. [Abstract](#)
39. Dose rate calculations around Ir brachytherapy sources using a Sievert integration model, Karaiskos P, Angelopoulos A, Baras P, Rozaki-Mavrouli H, Sandilos P, Vlachos L, Sakelliou L, *Physics in Medicine and Biology*, Volume 45, Issue 2, Feb.2000, Pages 383-398. [Abstract](#)
40. Limitations of the point and line source approximations for the determination of geometry factors around brachytherapy sources, Karaiskos P, Sakelliou L, Sandilos P, Vlachos L, *Medical Physics*, Volume 27, Issue 1, Jan.2000, Pages 124-128. [Abstract](#)