

CURRICULUM VITAE

Anastassopoulos Vassilis, Professor

Electronics Laboratory, Physics Department

University of Patras, 26500, Greece

Tel: 2610 996 147, Email: vassilis@upatras.gr

Vassilis Anastassopoulos was born in Patras, Greece, in 1958. He received the B.Sc. degree in Physics in 1980 (8.41) and his Ph.D. in Electronics in 1986, both from the University of Patras, Greece. His Ph.D. Thesis was on Digital Signal Processing and Delta Modulation Systems.

From 1980 until 1985 he was employed as a Research Assistant in the Electronics Laboratory, University of Patras. From 1985 until 1987 he served in the Greek Army as a Research Scientist in Communications and Information Department (CID) of the Hellenic National Defence General Staff (HNDGS). Since 1987 he has been a faculty member in Electronics Laboratory, University of Patras, where in 2005 he was elected as a full professor.

He worked for two years in Canadian Universities (Toronto 1989-1990, and Quebec City 1994-1995) dealing with Non-linear Filters, Pattern Recognition, Classification Techniques and Signal Detection in Noise.

His research interests are within the scope of Digital Signal and Image Processing, Radar Signal Detection, Pattern Recognition and Remote Sensing. He has given emphasis on processing Multi-spectral, SAR and Infrared Imagery, in Handwritten Analysis and Biometrics, in Information Fusion including Image Fusion, Decision Fusion and Sensor Fusion Architectures. He has also carried out work on Super-Resolution and Inverse Problems. Lately, he was involved in image processing techniques for Astro-particle Physics. His publication record contains over 130 journal and conference papers with over than 2600 citations (<http://scholar.google.gr/citations?user=BYcshrUAAAAJ&hl=en&oi=ao>).

He has been teaching Basic Electronics, Digital Signal & Image Processing, Informatics and Programming for 30 years. He is the author of four books used for University teaching purposes (in Greek). He also co-authored a book on Sigma-Delta Modulators published by Imperial College Press (Singapore, 2003). He has supervised ten Ph.D. theses on the scientific research topics he is involved in.

Among his active cooperations is the one with the CAST group at CERN (spokesperson Prof. K. Zioutas), where he is developing signal processing algorithms for possible detection of particles-candidates for the dark matter. The scientific group from DESY with Dr. Axel Lindner (spokesperson of the ALPS experiment in DESY) is also participating in this cooperation project. Simultaneously, he is in close cooperation with the Institute of Geophysics in Ecole Normale Supérieure in Paris, in the framework of the creation of Corinth Rift Geophysical Laboratory. A common Ph.D. has been carried out within this cooperation. He has also been collaborating with the Canadian Company AUG Signals for over 20 years, in radar signal processing, remote sensing and information fusion.

He has served in the Scientific, Technical or Organizing Committees of various International Conferences. He is a reviewer in a number of scientific journals. He served as Associate Editor in various Scientific Journal on his topic. He was involved in ESA activities and he was appointed as an Advisor in AFC ESA Committee (2005-2010).

He was the Head of Physics Department, University of Patras, for the biennium 2001-2003 and 2005-2007. He is again Head of the Department from 2017 to 2022. He was the Vice Rector for Strategic Research Planning and Development in the University of Patras from 2006 to 2010. From 2011 to 2013 he undertook the reestablishment of the Innovation and Technology Transfer Office of the University of Patras. He was the President and CO of Patras Science Park from 2015 till 2021. Among his activities is the implementation of the

Proof-of-Concept Project during which 8 scientific ideas were converted into commercial products.

Thirteen research and development projects have been carried out under his coordination.

PUBLICATIONS in Scientific Journals

- J1. **V. Anastassopoulos** and T. Deliyannis, 'Modified delta - adder and delta - multiplier for multiplexing', *Int. J. Electronics*, 1984, Vol. 57, No. 5, pp. 719-727.
- J2. **V. Anastassopoulos**, N. Kouvaras and T. Deliyannis, 'Method for designing half-band delta-modulation FIR filters', *IEE Proc. F, Commun., Radar and Signal Process.*, 1985, 132, (1), pp. 13-17.
- J3. **V. Anastassopoulos** and T. Deliyannis, 'Method to design FIR Hilbert transformers for delta modulated signals', *IEE Proc. G, Circuits, Devices and Systems*, 1986, 133, (2), pp. 113-114.
- J4. N. Zagris, M. Panagopoulou and **V. Anastassopoulos**, 'Extracellular matrix organized in embryonic cavities during induction of the embryonic axis in chick embryo', *Cell Biology International Reports*, Oct. 1989, Vol. 13, No. 10, pp. 833-843.
- J5. **V. Anastassopoulos** and T. Deliyannis, 'Efficient implementation of Nth-band FIR filters based on a simple window method', *IEE Proc. G, Circuits, Devices and Systems*, 1990, 137, (4), pp. 302-308.
- J6. S. Horianopoulos, **V. Anastassopoulos** and T. Deliyannis, 'A design technique for hardware reduction in Delta Modulation FIR Filters', *Int. Journal of Electronics*, 1991, Vol. 71, No. 1, pp. 93-106.
- J7. **V. Anastassopoulos** and A.N. Venetsanopoulos, 'The Classification Properties of the Pecstrum and its Use for Pattern Identification', *Circuits Systems and Signal Processing*, Vol. 10, No. 3, pp. 293 - 326, 1991.
- J8. S.L. Horianopoulos, **V. Anastassopoulos** and T. Deliyannis, 'Nonlinear Filtering of Delta Modulated Signals', *Electronics Letters*, Vol. 27, No. 12, pp. 1078-1079, 6th June 1991.
- J9. **V. Anastassopoulos** and G.A. Lampropoulos, 'A New and Robust CFAR Detection Algorithm', *IEEE Trans. on Aerospace and Electronic Systems*, Vol 28, No. 2, pp. 420-427, April 1992.
- J10. P. Yu, **V. Anastassopoulos** and A.N. Venetsanopoulos, 'Morphological Pattern Classification and Recognition Based on Neural Networks', *Canadian Journal of Electrical and Computer Engineering*, Vol. 17, No. 2, pp. 58-64, 1992.
- J11. Z. Kolitsi, G. Panagiotakis, **V. Anastassopoulos**, A. Skodras and N. Pallikarakis, 'A multiple projection method for digital tomosynthesis', *Medical Physics*, Vol. 19, No. 4, pp. 1045-1050, July/Aug. 1992.
- J12. **V. Anastassopoulos** and G.A. Lampropoulos, 'Optimal CFAR Detection in Weibull Clutter' *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 31, No. 1, pp. 52-64, January 1995.
- J13. A. Pneumatikakis, **V. Anastassopoulos** and T. Deliyannis, 'Realization of High Order Delta Sigma Filters', *International Journal of Electronics*, Vol. 78, No. 6, pp. 1071-1089, 1995.
- J14. P. Yu, **V. Anastassopoulos** and A.N. Venetsanopoulos, 'Pattern Recognition Based on Morphological Shape Analysis and Neural Networks', *Mathematics and Computers in Simulation*, 40, pp. 577-595, 1996.
- J15. **V. Anastassopoulos** and G.A. Lampropoulos, 'Radar clutter modeling using finite PDF tail', *IEE Electronic Letters*, Vol. 32, No. 3, February 1, 1996, pp. 256-258.
- J16. G.A. Lampropoulos, **V. Anastassopoulos** and J.F. Boulter, 'Constant false alarm rate detection of point targets using distributed sensors', *Optical Engineering, The Journal of SPIE*, 37(2), February 1998.
- J17. E.N. Zois and **V. Anastassopoulos**, 'Contour features using morphological transforms', *Electronics Letters*, Vol. 34, No. 1, pp. 56-58, January 1998.
- J18. **V. Anastassopoulos**, G.A. Lampropoulos, A. Drosopoulos and M.Rey, 'High Resolution Radar Clutter Statistics', *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 35, No. 1, pp. 43-60, January 1999.
- J19. A. Pneumatikakis, T. Deliyannis, A. Constantinides and **V. Anastassopoulos**, 'Sigma-Delta IIR filter realization using 3rd order remodulator', *Journal of Circuits, Systems and Computers*, Vol. 8, No 4, August 1999, pp. 473-481.
- J20. E.N. Zois and **V. Anastassopoulos**, 'Fusion of correlated decisions for writer verification', *Pattern Recognition*, 32/10, pp. 1821-1823, 1999.

- J21. E.N. Zois and **V. Anastassopoulos**, 'Morphological waveform coding for writer identification', *Pattern Recognition*, 33/3, pp. 385-389, 2000.
- J22. E.N. Zois and **V. Anastassopoulos**, 'Fusion of correlated decisions for writer verification', *Pattern Recognition*, 34/1 (2001), pp. 47-61.
- J23. V. Tsagaris and **V. Anastassopoulos**: 'Multispectral image fusion for improved RGB representation based on perceptual attributes', *International Journal on Remote Sensing*, Vol. 26, No. 15, 10 August 2005, pp. 3241- 3254.
- J24. **V. Anastassopoulos**, 'Fusion and Super-Resolution in Multispectral Data using Neural Networks for Improved RGB Representation', *The Imaging Science Journal*, Vol. 53, No. 2, June 2005.
- J25. V. Tsagaris and **V. Anastassopoulos**, 'Assessing Information Content in Color Images', *Journal of Electronic Imaging*, Vol 14, no, 4, 043007, 2005.
- J26. V. Tsagaris, **V. Anastassopoulos** and G. Lampropoulos, 'Fusion of hyperspectral data using segmented PCT for color representation and classification', *IEEE Transactions on Geosciences and Remote Sensing*, Vol. 43, No. 10, pp. 2365-2375, 2005.
- J27. V. Tsagaris and **V. Anastassopoulos**, 'Fusion of visible and infrared imagery for night vision', *Displays Journal*, Vol. 26, no. 4-5, pp. 191-196, 2005.
- J28. V. Tsagaris and **V. Anastassopoulos**, 'A global measure for assessing image fusion methods', *Optical Engineering (SPIE)*, Vol. 45, no2, 2006, DOI: 10.1117/12.683964.
- J29. E. N. Zois, I. Raptis and **V. Anastassopoulos**, 'Off-Line Metrology on SEM Images Using Gray Scale Morphology', *Microchimica Acta*, Publisher: Springer Wien, ISSN: 0026-3672, (Paper), 1436-5073 (Online), DOI: 10.1007/s00604-006-0564-3, Issue: Online First, Published online: 28 April 2006.
- J30. G. Christoulas, V. Tsagaris and **V. Anastassopoulos**, "Textural Characterization from various representations of MERIS data", *International Journal of Remote Sensing*, 28:3, 675 – 692, 2007.
- J31. K. Zioutas, M. Tsagri, Y. Semertzidis, Th. Papaevangelou, A. Nordt and **V. Anastassopoulos**, 'Overlooked astrophysical signatures of axion(-like) particles', arXiv: astro-ph/0701627, <http://arxiv.org/abs/astro-ph/0701627>, 2007.
- J32. A. Panagiotopoulou and **V. Anastassopoulos**, 'Scanned images resolution improvement using neural networks', *Neural Computing & Applications Journal*, Vol. 17, no. 1, pp. 39-47, 2008.
- J33. G. Panagopoulos, V. Tsagaris and **V. Anastassopoulos**, "Using synthetic aperture radar data to detect and identify ships", *SPIE Remote Sensing Newsroom*, DOI: 10.1117/2.1200802.1062., 2008.
- J34. K. Zioutas, M. Tsagri, Y. Semertzidis, T. Papaevangelou, T. Dafni and **V. Anastassopoulos**, 'Axion Searches with Helioscopes and astrophysical signatures for axion(-like) particles', *Invited Review article* (2009), arXiv:0903.1807v2 [astro-ph.SR] 27 Mar 2009, <http://arxiv.org/abs/0903.1807v2> and *New Journal of Physics*, 11, 105020, 2009.
- J35. A. Panagiotopoulou and **V. Anastassopoulos**, "Regularized super-resolution image reconstruction employing robust error norms", *Optical Engineering* 48, No. 11, 117004, November 2009.
- J36. K. Zioutas, M. Tsagri, Y. Semertzidis, T. Papaevangelou and **V. Anastassopoulos**, "The Enigmatic Sun: Laboratory for New Physics", *Balkan Physics Letters*, °c Bogazici University Press 16 April 2009, BPL, 16 (1), pp. 18 - 32, 161003 (2009).
- J37. K. Zioutas, T. Vafeiadis, M. Tsagri, Y. Semertzidis, T. Papaevangelou, T. Dafni and **V. Anastassopoulos** "Signatures for Solar Axions/WISPs", *Solar and Stellar Astrophysics (astro-ph.SR)*. arXiv: [astro-ph.SR] 2 Nov 2010, <http://arxiv.org/abs/1011.0629>.
- J38. K. Zioutas, M. Tsagri, Y. Semertzidis, T. Papaevangelou, A. Gardikiotis, T. Dafni and **V. Anastassopoulos**, "Solar X-rays from Axions: Rest-Mass Dependent Signatures", arXiv:1003.2181 [astro-ph.SR], 10 Mar. 2010. <http://arxiv.org/abs/1003.2181>
- J39. K. Zioutas, M. Tsagri, Y. Semertzidis, T. Papaevangelou, E. Georgiopoulou, T. Dafni and **V. Anastassopoulos**, "The mysterious Sun: a source and a trap of exotica", *Journal of Physics: Conference Series*, Vol. 309, No. 1, 2011, <http://iopscience.iop.org/1742-6596/309/1/012021>.
- J40. C. Fei, T. Liu, G. Lampropoulos and **V. Anastassopoulos**, 'Markov Chain CFAR Detection for Polarimetric Data using Data Fusion', *IEEE Trans. on Geoscience and Remote Sensing*, Vol. 50, No. 2, pp. 397-408, February 2012.
- J41. A. Panagiotopoulou and **V. Anastassopoulos**, "Super-resolution image reconstruction techniques: Trade-offs between the data-fidelity and regularization terms", *Information Fusion*, 13, pp. 185–195, 2012.

- J42. G. Koukiou and **V. Anastassopoulos**, "Drunk Person Identification Using Thermal Infrared Images", *International Journal of Electronic Security and Digital Forensics*, 2012, 4, (4), pp. 229-243.
- J43. G. Koukiou and **V. Anastassopoulos**, 'Velocity Filter Banks using 3-D FFT', *World Academy of Science, Engineering and Technology* 74 2013, 75, pp. 409-412.
- J44. K. Zioutas, M. Tsagri, Y.K. Semertzidis, T. Papaevangelou, D.H.H. Hoffmann and **V. Anastassopoulos**, "The 11-years solar cycle as the manifestation of the dark Universe", *Modern Physics Letters A*, Vol. 29, No. 37 (2014).
- J45. G. Koukiou and **V. Anastassopoulos**, "3-D FFT Moving Object Signatures for Velocity Filtering", *ACEEE International Journal of Signal and Image Processing, IJSIP*, Issue 1, Vol. 5, Jan. 2014.
- J46. G. Koukiou, **V. Anastassopoulos**, "Neural Networks for identifying drunk persons using thermal infrared imagery", *Forensic Science International*, 252 (2015), 69-76.
- J47. G. Koukiou and **V. Anastassopoulos**, "Infrared Signature of Facial Blood Vessels for Intoxicated Person Discrimination", 21 Jul 2015, *Australian Journal of Forensic Science*, <http://dx.doi.org/10.1080/00450618.2015.1060522>.
- J48. **V. Anastassopoulos**, et. Al., "Search for Chameleons with CAST", *Physics Letters B*, 749 (2015), 72-180.
- J49. G. Koukiou and **V. Anastassopoulos**, "Drunk Person Screening using Eye Thermal Signatures", *Journal of Forensic Sciences*, January 2016, Vol. 1., No.1, pp. 259-264.
- J50. **V. Anastassopoulos**, et. Al., "A storage ring experiment to detect a proton electric dipole moment", *Review of Scientific Instruments* 87, 115116 (2016), AIP Publishing.
- J51. G. Kouroupis, **V. Anastassopoulos**, "Polarimetric decomposition for the selection of persistent scatterers", *Remote Sensing Letters*, V. 8, Issue 3, pp 271-279, DOI: 2150704X.2016.1264022, 2017.
- J52. **V. Anastassopoulos**, et. Al., "Towards a medium-scale axion helioscope and haloscope", *Journal of Instrumentation*, Jinst, Published by IOP Publishing for Sissa Medialab, <https://doi.org/10.1088/1748-0221/12/11/P11019>, ArXiv ePrint: 1706.09378, Volume 12, November 2017
- J53 **V. Anastassopoulos**, and CAST Collaboration, "New CAST limit on the axion–photon interaction", *Nature Physics* 13, 584–590 (2017), doi:10.1038/nphys4109.
- J54. G. Koukiou and **V. Anastassopoulos**, "*Local Difference Patterns for Drunk Person Identification*", *Multimedia Tools and Applications* 12 June 2017, pp. 1-13.
- J55. K. Zioutas, V. Anastassopoulos, et.al., 'Search for axions in streaming dark matter', arXiv:1703.01436, 4 Mar 2017
- J56. G. Koukiou, **V. Anastassopoulos**, "*Fusion of Dissimilar Features from Thermal Imaging for Improving Drunk Person Identification*", *International Journal of Signal Processing Systems* Vol. 5, No. 3, September 2017.
- J57. **V. Anastassopoulos**, et.al., 'Improved Search for Solar Chameleons with a GridPix Detector at CAST', 8 Nov 2018, arXiv: 1808.00066
- J58. A Gardikiotis, **V. Anastassopoulos** et.al, 'Search for streaming dark matter axions or other exotica', 26 March, 2018, arXiv: 1803.08588
- J59. G Cantatore, YK Semertzidis, A Gardikiotis, W Funk, M Karuza, H Fischer, D Vitali, K Zioutas, S Cetin, **V. Anastassopoulos**, DHH Hoffmann, 'aKWISP: investigating short-distance interactions at sub-micron scales', 20 March, 2018, arXiv: 1803.07685
- J60. **V. Anastassopoulos** et.al., The CAST collaboration, "Improved search for solar chameleons with a GridPix detector at CAST", *Journal of Cosmology and Astroparticle Physics*, JCAP01(2019)032.
- J61. G. Kouroupis and **V. Anastassopoulos**, "Scatterer Characterization Based on the Condiagonalization of the Sinclair Backscattering Matrix", *Progress In Electromagnetics Research M*, Vol. 85, 59–69, 2019
- J62. Kouroupis, G.; **Anastassopoulos, V.**, "A polarimetric CFAR ship detector based on the joint probability function of simulated first-order Markov chains", *International Journal of Remote Sensing*, **2019**, 40:13, 5121-5140.
- J63. Georgia Koukiou and **Vassilis Anastassopoulos**, 'Gender Discrimination Based on the Thermal Signature of the Face and the External Ear', *Signal & Image Processing: An International Journal (SIPIJ)* Vol.11, No.4, August 2020, DOI: 10.5121/sipij.2020.11402 13

- J64. Konstantin Zioutas, **Vassilis Anastassopoulos**, et.al. 'The Dark Universe Is Not Invisible', Phys. Sci. Forum 2021, MDPI, 2, 10. <https://doi.org/10.3390/ECU2021-09313>, February 2021
- J65. G. Koukiou, **V. Anastassopoulos**, "Fully Polarimetric Land Cover Classification based on Markov Chains". *Advances in Remote Sensing*, 2021, **10**(3), 47-65.

There are also more than 70 publications in conference papers.