

Panayiotis V. Frangos, Professor



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Studies - Employment

Panayiotis V. Frangos was born in Thessaloniki, Greece, in 1959. He received the Bachelor Degree from the NTUA, Greece, in 1983, and the Master's and Ph. D. Degrees from the Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, USA, in 1985 and 1986 respectively, all in Electrical Engineering. Since 1989, after his military service in Greece, he has been with the Faculty of the Department of Electrical and Computer Engineering, NTUA, first as a Lecturer (1989 - 92), and subsequently as an Assistant Professor (1992 - 96), Associate Professor (1996 - 2000), and Full Professor (2000 - today).

Areas of Interest

His areas of research include : Propagation of electromagnetic waves over terrain, radar systems, direct and inverse synthetic aperture radar signal processing techniques, scattering from fractal surfaces, high frequency scattering techniques, inverse scattering, nonlinear propagation of electromagnetic (EM) waves in optical fibers, finite - element techniques, near EM field calculations, imaging of radar targets etc.

Scientific Publications

He is the author of the book 'Electromagnetic methods of Remote Sensing', in Greek (248 pages). Furthermore, he has presented more than about 190 papers in International Scientific Journals (41), Book Chapters (3) and International Conferences - International Scientific Working Groups (127). Furthermore, he has received about 280 citations for his research work (240 citations from other authors, in other words if self – citations are excluded), according to the following source : 'ISI Web of Science – Thomson Reuters'.

Other Scientific Activities

- Since 2009 he has been the Editor for the International Scientific 'Journal of Applied Electromagnetism, JAE', published electronically at the web twice a year from School of Electrical and Computer Engineering, NTUA, Athens, Greece.
- Member of the Editorial Board for Journal of 'Electronics and Electrical Engineering' (2012 / Journal's Impact Factor = 0.913, in 2011).
- He has acted as a Reviewer to many International Scientific Journals, such as IEEE Antennas and Propagation, IEEE Aerospace and Electronics Systems, IET (IEE) Signal Processing, Signal Processing (Elsevier), IEEE Microwave Theory and Techniques, Journal of Electromagnetic Waves and Applications (JEWA), Radio Science, Journal of Applied Electromagnetism, Electronics Letters, IEE Proceedings, Applied Optics, Journal of Optical Society of America B (JOSA B), IEEE Quantum Electronics, Optics Communications, Optics Letters, Journal of 'Shipbuilding Engineering Research' (SER) etc.
- He has been a Member of the Scientific / Organizing Committee for many International Conferences, such as the EuCAP2006 and EuCAP2007 Conferences on Antennas and Propagation (Nice, France and Edinburgh, UK, respectively), the International Conferences of the Black Sea Union on Applied Electromagnetism at Metsovo, Greece (1996) and Xanthi, Greece (2000), Mediterranean Microwave Symposium 2005 (MMS'05), International Conference of the 20th Anniversary of the Technical University of Plovdiv, Bulgaria (2006), 'Electronics 2014' and 'Electronics 2015' Conferences, Palanga, Lithuania, Vice – Chairman of the International Conferences on 'Communications, Electromagnetics and Medical Applications' CEMA'06, CEMA'07, CEMA'09, CEMA'11, CEMA'13, CEMA'15, CEMA'16 and CEMA'17 in Sofia, Bulgaria, and Chairman of the International Conferences CEMA'08, CEMA'10, CEMA'12 and CEMA'14 in Athens, Greece, 'Session Chairman' at International Conferences 'Electronics 2014' and 'Electronics 2015', Palanga, Lithuania, etc.
- He has acted as Guest Editor to the Special Issue of IET (former IEE) 'Signal Processing' Journal on 'ISAR Signal Processing Techniques' (June 2007).
- Also, Lead Guest Editor to the Special Issue of 'International Journal Antennas and Propagation' (IJAP), Hindawi Ed. Co., on 'Propagation of Electromagnetic (EM) Waves over Terrain' (PEWT), July 2013 – July 2014.
- He has also participated to many national and international research projects and International Collaboration Programs (e.g. Socrates – Erasmus, and others), as well as collaboration with Eurasian National University, Astana, Kazakshtan (Prof. S. Sautbekov).
- He has been a member of several scientific working groups and technical committees, both national and international.
- He has taught as an Instructor to several Universities, such as the NTUA (Faculty Member, see above), University of Pennsylvania, USA (teaching assistant), Greek Air Force Academy, Greek Naval Academy etc., besides to his teaching abroad through Socrates – Erasmus agreements.
- He is a member of the Technical Chamber of Greece.

Journal publications in the last ten (10) years:

1. V. Karakasiliotis, A. D. Lazarov, P. V. Frangos, G. Boultradakis and G. Kalognomos, 'Two-dimensional ISAR Model and Image Reconstruction with Stepped Frequency Modulated Signal', IET Signal Processing Journal, Special Issue on 'ISAR Signal Processing Techniques and Feature Extraction', Vol. 2, Issue 3, pp. 277 – 290, September 2008.
2. V. Karakasiliotis, G. Boultradakis, A. D. Lazarov, and P. V. Frangos, 'High-Resolution Stepped Frequency Inverse Synthetic Aperture Radar Imaging Using Time-Frequency Transforms', Journal of Applied Electromagnetism (JAE), June 2008 issue.
3. E. Papkelis, H. Anastassiou and P. Frangos, 'A time – efficient near – field scattering method applied to radio – coverage simulation in urban microcellular environments', IEEE Trans. Antennas and Propagation, Vol. 56, No. 10, pp. 3359 – 3363, October 2008.
4. H. Moshovitis, H. Anastassiou and P. Frangos, 'Calculation results of scattering of electromagnetic waves from rectangular perfectly conducting plate using an extended three

- dimensional Stationary Phase Method which is based on Fresnel functions (SPM-F)', *Journal of Applied Electromagnetism (JAE)*, December 2008 issue, pp. 68 – 77.
5. S. Sautbekov, I. Kanymgazieva and P. Frangos, 'The generalized solutions of Maxwell equations for the uniaxial crystal', *Journal of Applied Electromagnetism (JAE)*, December 2008, issue, pp. 43 – 55.
 6. E. Bouladakis, G. K. Kalognomos, L. K. Stergioulas, A. V. Karakasiliotis, and P. V. Frangos, 'A Comparative Study of Bilinear Time–Frequency Transforms of ISAR Signals for Air Target Imaging', *'Electronics and Electrical Engineering' Journal*, Vol. 92, Nr. 4, pp. 87 – 92, 2009.
 7. Ch. Moschovitis, K. Karakatselos, E. Papkelis, H. Anastassiou, I. Ouranos, A. Tzoulis and P. Frangos, 'High Frequency Analytical Model for Scattering of Electromagnetic Waves from a Perfect Electric Conductor Plate using an Enhanced Stationary Phase Method Approximation', *IEEE Trans. Antennas and Propagation*, Vol. 58, No. 1, pp. 233 – 238, January 2010.
 8. S. S. Sautbekov, I. A. Kanymgazieva and P. Frangos, 'Radiation of electric and magnetic dipole antennas in magnetically anisotropic media', *'Electronics and Electrical Engineering' Journal*, September 2009, Vol. 97, No. 1, January 2010.
 9. S. Sautbekov and P. Frangos, 'Directivity diagrams of the magnetic moment of a dipole in the anisotropic medium', *Journal of Applied Electromagnetism (JAE)*, Vol. 11, No. 1, pp. 28 – 34, June 2009.
 10. G. K. Kalognomos, G. E. Bouladakis, A. V. Karakasiliotis and P. V. Frangos, 'Performance Analysis of a Parameterized APES (PAPES) Spectrum Estimation Method for ISAR Applications', *'Electronics and Electrical Engineering' Journal*, No. 3 (99), March 2010.
 11. Doukeli, A. Lioumpas, G. Karagiannidis and P. Frangos, 'Increasing the Efficiency of Rake Receivers for Ultra-Wideband Applications', *'Wireless Personal Communications' Journal*, accepted July 2010.
 12. Ch. G. Moschovitis, H. T. Anastassiou, and P. V. Frangos, 'Scattering of electromagnetic waves from a rectangular plate using an Extended Stationary Phase Method based on Fresnel functions (SPM-F)', *Progress In Electromagnetics Research (PIER)*, Vol. PIER 107, pp. 63-99, August 2010.
 13. E. D. Kallitsis, A. V. Karakasiliotis, G. E. Bouladakis, P. V. Frangos, 'A Fully Automatic Autofocusing Algorithm for Post-processing ISAR Imaging based on Image Entropy Minimization', *'Electronics and Electrical Engineering' Journal*, No. 4 (110), April 2011, pp. 125 – 130.
 14. N. Triantafyllou, K. Ksystra, P. Stefaneas and P. Frangos: 'Proof Carrying Code using Algebraic Specifications', *Journal of Applied Mathematics and Bioinformatics, (JAMB)*, Vol. 3, No. 1, pp. 43 – 56, 2013, http://www.scienpress.com/Upload/JAMB/Vol%203_1_3.pdf [selected paper from Scientific Conference 'Cryptography and its Applications in the Armed Forces', Hellenic Military Academy, Athens, 6/4/2012].
 15. N. Triantafyllou, P. Stefaneas and P. Frangos, 'An Algorithm for Allocating User Requests to Licenses in the OMA DRM System', *IEICE Transactions on Fundamentals of Electronics, Communication and Computer Sciences*, accepted for publication in December 2012.
 16. E. D. Kallitsis, A. V. Karakasiliotis and P. V. Frangos, 'Inverse synthetic aperture radar (ISAR) imaging : a novel fine range profile alignment method for air target slant range rotational motion compensation', *Journal of Applied Electromagnetism (JAE)*, Vol. 16, No. 1, pp. 28 – 45, June 2014.
 17. Malamou, A. Karakasiliotis, E. Kallitsis, G. Bouladakis, and P. Frangos, 'Application of a Fully Automatic Autofocusing Algorithm for Post – Processing of Synthetic Aperture Radar Images based on Image Entropy Minimization', *Electronics and Electrical Engineering Journal*, Vol. 19, No. 6, June 2013, pp. 95 – 98.
 18. Malamou, C. Pandis, P. Frangos, P. Stefaneas, A. Karakasiliotis and D. Kodokostas, 'Application of the Modified Fractal Signature Method for Terrain Classification from Synthetic Aperture Radar Images', *Electronics and Electrical Engineering Journal*, Vol. 20, No. 6, pp. 118 – 121, 2014.
 19. Ch. Christakis, K. Ioannidi, S. Sautbekov, P. Frangos and S.K. Atanov, 'The Radiation Problem from a Vertical Short Dipole Antenna above Flat and Lossy Ground : Novel Formulation in the Spectral Domain with Closed – Form Analytical Solution in the High Frequency Regime', *Electronics and Electrical Engineering Journal*, Vol. 20, No. 9, pp. 35 – 38, November 2014.
 20. Malamou, C. Pandis, A. Karakasiliotis, P. Stefaneas, D. Kodokostas and P. Frangos, 'Application of an autofocusing algorithm for SAR image quality improvement and application of the modified fractal signature (MFS) method for SAR image classification for the case of

real radar data', *Journal of Applied Electromagnetism (JAE)*, Vol. 16, No. 1, pp. 46 – 53, June 2014.

21. K. Ioannidi, Ch. Christakis, S. Sautbekov, P. Frangos and S.K. Atanov, 'The radiation problem from a vertical Hertzian dipole antenna above flat and lossy ground : novel formulation in the spectral domain with closed – form analytical solution in the high frequency regime', *International Journal Antennas and Propagation (IJAP)*, Hindawi Ed. Co., Special Issue 'Propagation of electromagnetic (EM) waves over terrain' (PEWT), vol. 2014, Article ID 989348, doi:10.1155/2014/989348, 9 pages, 2014.
22. K. Ksystra, P. Stefaneas and P. Frangos, 'An algebraic framework for the verification of context – aware adaptive systems', *International Journal of Software Engineering and Knowledge Engineering*, Vol. 25, No. 7, pp. 1105 – 1128, September 2015.
23. S. Bourgiotis, A. Chrysostomou, K. Ioannidi, S.Sautbekov and P. Frangos, 'Radiation of a Vertical Dipole over Flat and Lossy Ground using the Spectral Domain Approach : Comparison of Stationary Phase Method Analytical Solution with Numerical Integration Results', '*Electronics and Electrical Engineering*' Journal, Vol. 21, No. 3, May/June of 2015.
24. Chrysostomou, S. Bourgiotis, S.Sautbekov, K. Ioannidi and P. Frangos, 'Radiation of a Vertical Dipole Antenna over Flat and Lossy Ground : Accurate Electromagnetic Field Calculation using the Spectral Domain Approach along with Redefined Integral Representations and corresponding Novel Analytical Solution', '*Electronics and Electrical Engineering*' Journal, Vol. 22, No. 2, 2016, pp. 54-61.
25. Kotopoulis, A. Malamou, G. Pouraimis, E. Kallitsis and P. Frangos, 'Characterization of Rough Fractal Surfaces from Backscattered Radar Data', '*Elektronika ir Elektrotechnika*' Journal, ISSN 1392 – 1215, Vol. 22, No. 6, pp. 61-66, 2016.
26. G. Bebrov, S.Bourgiotis, A. Chrysostomou, S. Sautbekov and P. Frangos, 'The radiation problem from a vertical short dipole antenna above flat and lossy ground : validation of novel spectral domain analytic solution in the high frequency regime and comparison to empirical terrain propagation models', accepted for publication to *Journal of Applied Electromagnetism (JAE)*, as selected from CEMA'16 Conference, Athens, Greece, October 2016.
27. G. Pouraimis, A. Kotopoulis, E. Kallitsis and P. Frangos, 'Characterization of Three – Dimensional Rough Fractal Surfaces from Backscattered Radar Data', accepted by '*Elektronika ir Elektrotechnika*' Journal, April 2017.
28. Seil Sautbekov, Sotiris Bourgiotis, Ariadni Chrysostomou and Panayiotis Frangos, 'A Novel Asymptotic Solution to the Sommerfeld Radiation Problem: Analytic field expressions and the emergence of the Surface Waves', '*Progress in Electromagnetics Research M*' Journal ('PIER M'), Vol. 64, pp. 9-22, 2018.