

Biography of George Fikioris

George Fikioris was born in Boston, MA, on December 3, 1962. He received the Diploma of Electrical Engineering from the National Technical University of Athens, Greece (NTUA) in 1986, and the S.M. and Ph.D. degrees in Engineering Sciences from Harvard University, Cambridge, MA, in 1987 and 1993, respectively.

From 1993 to 1998, he was an electronics engineer with the Air Force Research Laboratory, Sensors Directorate, Hanscom AFB, MA, USA. From 2002 until February 2007, he was a Lecturer at the School of Electrical and Computer Engineering, NTUA and, in February 2007, he became Assistant Professor at that School. He is the author or coauthor of 45 papers in technical journals.

Together with R. W. P. King and R. B. Mack, he has co-authored “Cylindrical Antennas and Arrays” (Cambridge University Press, 2002). He is the author of “Mellin-transform Method for Integral Evaluation: Introduction and Applications to Electromagnetics” (Morgan & Claypool, 2007).

His research mostly deals with fundamental and mathematical aspects of electromagnetics and antennas, especially wire antennas and antenna arrays.

Dr. Fikioris is a Senior Member of the IEEE (Antennas & Propagation, Microwave Theory & Techniques, and Education Societies) and a member of the Technical Chamber of Greece.

Books and technical journal papers by GEORGE FIKIORIS

A. Books

[B1] R. W. P. King, G. Fikioris, and R. B. Mack, *Cylindrical antennas and arrays*. Cambridge, UK, Cambridge University Press, 2002.

[B2] G. Fikioris, *Mellin-transform method for integral evaluation: Introduction and applications to electromagnetics*. (Synthesis Lectures on Computational Electromagnetics #13). Morgan and Claypool Publishers, 2007.

B. Technical journal papers (published or accepted)

[J1] J. G. Fikioris, J. L. Tsalamengas, and G. Fikioris, "Strongly convergent Green's function expansions for rectangularly shielded microstrip lines," *IEEE Trans. Microw. Theory Techniques*, vol. 36, no. 10, pp. 1386—1396, Oct. 1988.

[J2] J. G. Fikioris, J. L. Tsalamengas, and G. Fikioris, "Exact solutions for shielded printed microstrip lines by the Carleman-Vekua method," *IEEE Trans. Microw. Theory Techniques*, vol. 37, no. 1, pp. 21—33, Jan. 1989.

- [J3] G. Fikioris, R. W. P. King, and T. T. Wu, "The resonant circular array of electrically short elements," *Journal of Applied Physics*, vol. 68, no. 2, pp. 431—439, July 1990.
- [J4] G. Fikioris, R. W. P. King, and T. T. Wu, "A novel resonant circular array: Improved analysis," *Progress in Electromagnetics Research*, vol. 8. J. A. Kong, ed., EMW Publishing, Cambridge, MA, 1994, pp. 1—30.
- [J5] G. Fikioris, R. W. P. King, and T. T. Wu, "Novel surface-wave antenna," *IEE Proc. Microw. Antennas Propag.*, vol. 143, no. 1, pp. 1—6, February 1996.
- [J6] G. Fikioris, "Field patterns of resonant noncircular closed-loop arrays," *J. Electromagnetic Waves and Applications*, vol. 10, no. 3, pp. 307—327, March 1996.
- [J7] G. Fikioris, "Experimental study of novel resonant circular arrays," *IEE Proc. Microw. Antennas Propag.*, vol. 145, no. 1, pp. 92—98, February 1998.
- [J8] D. Margetis, G. Fikioris, J. M. Myers, and T. T. Wu, "Highly directive current distributions: General theory," *Physical Review E*, vol. 58, no. 2, pp. 2531—2547, August 1998.
- [J9] G. Fikioris, "Table erratum," *Mathematics of Computation*, vol. 67, no. 224, pp. 1753—1754, October 1998.
- [J10] G. Fikioris, "An application of convergence acceleration methods," *IEEE Trans. Antennas Propagat.*, vol. 47, no. 12, pp. 1758—1760, Dec. 1999.
- [J11] D. Margetis and G. Fikioris, "Two-dimensional, highly directive currents on large circular loops," *Journal of Mathematical Physics*, vol. 41, no. 9, pp. 6130—6172, September 2000.
- [J12] G. Fikioris and T. T. Wu, "On the application of numerical methods to Hallen's equation," *IEEE Trans. Antennas Propagat.*, vol. 49, no. 3, pp. 383—392, March 2001.
- [J13] G. Fikioris, "A note on the Method of Analytical Regularization," *IEEE Antennas and Propagation Magazine*, vol. 43, no. 2, pp. 34—40, April 2001.
- [J14] G. Fikioris, "The approximate integral equation for a cylindrical scatterer has no solution," *J. Electromagnetic Waves and Applications*, vol. 15, no. 9, pp. 1153—1159, September 2001.
- [J15] G. Fikioris, P. G. Cottis, and A. D. Panagopoulos, "On an integral related to biaxially anisotropic media," *J. of Computational and Applied Mathematics*, vol. 146, no. 2, pp. 343—360, September 2002.
- [J16] A. D. Panagopoulos, G. Fikioris, and J. D. Kanellopoulos, "Rain attenuation power spectrum of slant path," *Electronics Letters*, vol. 38, no. 20, pp. 1220—1222, September 2002.

- [J17] G. C. Kokkorakis, J. G. Fikioris, and G. Fikioris, "Field induced in inhomogeneous spheres by external sources. I. The scalar case," *J. of the Acoustical Society of America*, vol. 112, no. 4, pp. 1297—1306, October 2002.
- [J18] J. L. Tsalamengas and G. Fikioris, "Rapidly converging spectral-domain analysis of rectangularly shielded layered microstrip lines," *IEEE Trans. Microw. Theory Techniques*, vol. 51, no. 6, pp. 1729—1734, June 2003.
- [J19] G. Fikioris, J. Lionas, and C. G. Lioutas, "The use of the frill generator in thin-wire integral equations," *IEEE Trans. Antennas Propagat.*, vol. 51, no. 8, pp. 1847—1854, August 2003.
- [J20] G. Fikioris, "Analytical studies supplementing the Smith Chart," *IEEE Trans. Education*, vol. 47, no. 2, pp. 261—268, May 2004.
- [J21] G. Fikioris, P. J. Papakanellos, J. D. Koundouros, and A. K. Patsiotis, "Difficulties in MoM analyses of resonant circular arrays of cylindrical dipoles," *Electronics Letters*, vol. 41, no. 2, pp. 54—55, 20th January 2005.
- [J22] G. Fikioris and C. A. Valagiannopoulos, "Input admittances arising from explicit solutions to integral equations for infinite-length dipole antennas," *Progress in Electromagnetics Research*, vol. 55 (PIER 55), pp. 285—306, 2005.
- [J23] G. Fikioris, S. D. Zaharopoulos, and P. D. Apostolidis, "Field patterns of resonant closed-loop arrays: Further analysis," *IEEE Trans. Antennas Propagat.*, vol. 53, no. 12, pp. 3906—3914, Dec. 2005.
- [J24] I. Psarros and G. Fikioris, "Two-term theory for infinite linear array and application to study of resonances," *J. of Electromagnetic Waves and Applications*, vol. 20, no. 5, pp. 623—645, April 2006.
- [J25] G. Fikioris, "On two types of convergence in the Method of Auxiliary Sources," *IEEE Trans. Antennas Propagat.*, vol. 54, no. 7, pp. 2022—2033, July 2006.
- [J26] G. Fikioris, "Integral evaluation using the Mellin transform and generalized hypergeometric functions: Tutorial and applications to antenna problems" *IEEE Trans. Antennas Propagat.*, vol. 54, no. 12, pp. 3895—3907, Dec. 2006 **(review paper)**.
- [J27] P. J. Papakanellos and G. Fikioris, "A possible remedy for the oscillations occurring in thin-wire MoM analysis of cylindrical antennas," *Progress in Electromagnetics Research*, vol. 69 (PIER 69), pp. 77--92, 2007.
- [J28] G. Fikioris and I. Psarros, "On the phenomenon of oscillations in the Method of Auxiliary Sources," *IEEE Transactions Antennas Propagat.*, vol. 55, no. 5, pp. 1293-1304, May 2007.
- [J29] S. A. Kanellopoulos, G. Fikioris, A. D. Panagopoulos, and J. D. Kanellopoulos,

“A modified synthesis procedure for first order stochastic differential equations for the simulation of baseband random processes,” *Signal Processing*, vol. 87, no. 12, pp. 3063-3074, Dec. 2007.

[J30] G. Fikioris, P. J. Papakanellos, and H. T. Anastassiou, “On the use of nonsingular kernels in certain integral equations for thin-wire circular-loop antennas,” *IEEE Trans. Antennas Propagat.*, vol. 56, no. 1, pp. 151-157, Jan. 2008. **See also**, “Corrections...,” *IEEE Trans. Antennas Propagat.*, vol. 58, no. 10, p. 3436, Oct. 2010.

[J31] G. Fikioris and K. Matos, “Near fields of resonant circular arrays of cylindrical dipoles,” *IEEE Antennas and Propagation Magazine*, vol. 50, no. 1, pp. 97-107, Feb. 2008.

[J32] I. Psarros, G. Fikioris, and M. Vlahogianni, “Pseudopotentials: A simplified model for certain types of array elements,” *IEEE Transactions Antennas Propagat.*, vol. 57, no. 2, pp. 414-424, Feb. 2009.

[J33] G. Fikioris and A. Michalopoulou, “On the use of entire-domain basis functions in Galerkin methods applied to certain integral equations for wire antennas with the approximate kernel,” *IEEE Trans. Electromagn. Compat.*, vol. 51, no. 2, pp. 409-412, May 2009.

[J34] G. Fikioris, D. Tsamitros, S. Chalkidis, and P. J. Papakanellos, “Original and modified kernels in method-of-moments analyses of resonant circular arrays of cylindrical dipoles,” *IEEE Transactions Antennas Propagat.*, vol. 58, no. 3, pp. 765-772, March 2010.

[J35] P. J. Papakanellos, G. Fikioris, and A. Michalopoulou, “On the oscillations appearing in numerical solutions of solvable and nonsolvable integral equations for thin-wire antennas,” *IEEE Transactions Antennas Propagat.*, vol. 58, no. 5, pp. 1635-1644, May 2010.

[J36] G. Fikioris, N. Tsitsas, and I. Psarros, “On the nature of oscillations in discretizations of the extended integral equation,” *IEEE Trans. Antennas Propagat.*, vol. 59, no. 4, pp. 1415-1419, April 2011.

[J37] G. Fikioris, P. J. Papakanellos, Th. K. Mavrogordatos, N. Lafkas, and D. Koulidakis, “Eliminating unphysical oscillations arising in Galerkin solutions to classical integral equations of antenna theory,” *SIAM J. Appl. Math.*, vol. 71, no. 2, pp. 559-585, 2011.

[J38] I. Chremmos and G. Fikioris, “Note on acoustic pseudopotentials: Energy viewpoint, real scatterers and linear arrays,” *Acta Acustica united with Acustica*, vol. 97, no. 3, pp. 364-372, May/June 2011.

[J39] I. Chremmos and G. Fikioris, “Traveling waves in two parallel infinite linear point-scatterer arrays,” *J. Opt. Soc. Am. A*, vol. 28, no. 6, pp. 962-969, 2011.

- [J40] G. Fikioris, S. Lygkouris, and P. J. Papakanellos, "Method-of-Moments analysis of resonant circular arrays of cylindrical dipoles," *IEEE Trans. Antennas Propagat.*, vol. 59, no. 12, pp. 4615-4623, Dec. 2011.
- [J41] C. A. Valagiannopoulos, N. L. Tsitsas, and G. Fikioris, "Convergence analysis and oscillations in the method of fictitious sources applied to dielectric scattering problems," *J. Opt. Soc. Am. A.*, vol. 29, no. 1, pp. 1-10, Jan. 2012.
- [J42] P. Andrianesis and G. Fikioris, "Superdirective-type near fields in the Method of Auxiliary Sources (MAS)," *IEEE Trans. Antennas Propagat.*, vol. 60, no. 6, pp. 3056-3060, June 2012. **See also**, S. P. Skobelev, 'Comments on "Superdirective-type near fields in the Method of Auxiliary Sources" (with authors' reply),' *IEEE Trans. Antennas Propagat.*, vol. 61, no. 4, p. 2360, April 2013.
- [J43] I. Psarros, V. Kollia, and G. Fikioris, "Improved model of pseudopotentials for array elements," *Microwave and Optical Technology Letters*, vol. 54, no. 8, pp. 1874-1879, Aug. 2012.
- [J44] S. Lygkouris and G. Fikioris, "Faster convergence for MoM analysis of resonant circular arrays of cylindrical dipoles," *Electronics Letters*, vol. 48, no. 18, pp. 1089-1090, 30 August 2012.
- [J45] G. Fikioris, N. L. Tsitsas, and G. K. Charitos, "Convergence, divergence, and oscillations within the Null Field Method with Discrete Sources," accepted for publication in *Journal of Quantitative Spectroscopy and Radiative Transfer* (Special Issue dedicated to Peter Waterman).