DR IOANNIS TH. FAMELIS

I work as a Professor Applied Mathematics in the Department of Electrical and Electronic Engineering, Faculty of Engineering, University of West Attica. I hold a BSc in Mathematics (Kapodistrian University of Athens,1991) and a M.Sc. in Numerical Analysis and Programming (University of Dundee,1992). I received my PhD in Computational Mathematics and Numerical Solution of Differential Equations (Department of Mathematics, National Technical University of Athens, 1998).

I have taught mathematics and computer science courses in National Technical University of Athens, Agricultural University of Athens, Open University of Greece and TEI of Lamia, TEI of Athens, University of West Attica. I have taught for ten years in Secondary Education as an Informatics Professor at the College of Athens. I have successfully completed a web based course on "Teaching to Standards with New Technologies" at the Graduate School of Education of Harvard University and I have been trained for two years in the application of modern pedagogical theories in the learning environment and in issues of cooperation within educational institutions and in matters of organization and setting educational goals in the school by the Graduate School of Education of Harvard University.

My main research interests focus on Applied and Computational Mathematics, Numerical Analysis of Ordinary, Partial and Functional Differential Equations, Symbolic Computations, Neural Networks and Computational Intelligence.

I have participated in European Research Projects in NTUA for the enhancement of the Numerical Analysis courses in NTUA. I have also participated as a research member in five research programs in National Technical University of Athens, TEI of Athens and TEI of Sterea Hellas. I have competed as coordinator a research project with title "New numerical and computational methods for the solution of differential equations with applications in environmental issues." which run under the framework of "Archimedes III Research Project" in TEI of Athens. I am research member of MicroSences laboratory.

I have written three books and I have refereed papers in several research journals.

SCIENTIFIC PROFILE

Publications in journals	**40**
Conferences with periodicity and referring procedure	**34**
Other conferences	**27**
Citations 852 (scopus)/913 (Web of Science)/1173 (Google Scholar)	
Number of research programs as a principal investigator	**1**
Number of research programs as a research member team	**5**
Postdoctoral Research Grants	**1**
Books	**3**
h-index (Scopus)	**13**
h-index (Google Scholar)	**14**

(updated September 2023)

1. *«Symbolic Derivation of Runge-Kutta-Nyström order conditions.»* (με Χ. Τσίτουρα), J. Comput. Appl. Math. 218 (2008), no 2 pp. 543-555.

2. *«Runge Kutta Methods for Fuzzy Differetial Equations»* (με Σ. Παλλιγκίνη και Γ. Παπαγεωργίου), Applied Mathematics and Computation, 209 (2009), pp. 97-105.

3. **«Numerical Solution of Stochastic Differential Equations with Additive Noise by Runge-Kutta Methods»** (με Ξανθό Φοίβο και Γ. Παπαγεωργίου), Journal of Numerical Analysis, Industrial and Applied Mathematics (JNAIAM) v.4, No. 3-4,(2009) pp 171-180.

4. **«Neural Network based derivation of efficient high order Runge-Kutta-Nystrom pairs for the integration of orbits.»**, International Journal of Modern Physics C, v. 22, No. 12 (2011), pp. 1309-1316.

5. **«Using neural networks for the derivation of Runge–Kutta–Nystrom pairs for integration of orbits»**, (with Prof Ch. Tsitouras) New Astronomy 17 (2012), pp. 469-473.

6. «**A new Kalman Filter based on Information Geometry techniques for optimizing numerical environmental simulations»** (with G. Galanis, A. Liakatas) Stochastic Environmental Research and Risk Assessment, (2016) DOI 10.1007/s00477-016-1332-5.

7. **«A new approach to the construction of DIMSIMs of high order and stage order»,** (with Prof. Z. Jackiewicz), Applied Numerical Mathematics 119 (2017) pp. 79-93.

8. «**A highly accurate DE-PSO algorithm for the construction of initial value problem solvers.»** , (with A. Alexandridis and Prof Ch. Tsitouras), Engineering Optimization, https://doi.org/10.1080/0305215X.2017.1400545.

9. **«Bounds for Variable Degree Rational L_{∞} Approximations to the Matrix Exponential»**, (with Prof Ch. Tsitouras), Applied Mathematics and Computation, Applied Mathematics and Computation 338 (2018) 376–386, https://doi.org/10.1016/j.amc.2018.06.040.

10. **«Design and Evaluation of a Multidirectional Thermal Flow Sensor on Flexible Substrate»**, (with Dimitris Barmpakos, Anastasios Moschos, Damianos Marinatos and Grigoris Kaltsas), (2019) Journal of Sensors, Volume 2019, Article ID 8476489, 10 pages, https://doi.org/10.1155/2019/8476489.

11. « **Neural network solution of pantograph type differential equation**s », (with Chih-Chun Hou, T. E. Simos) Math Meth Appl Sci. 2019;1-6. https://doi.org/10.1002/mma.6126

12. «**Neural Network Solution of Single-Delay Differential Equations»** (with Jie Fang, Chenglian Liu, T. E. Simos) February 2020, Mediterranean Journal of Mathematics 17(1), DOI: 10.1007/s00009-019-1452-5

13. «**Parameterized Neural Network training for the solution of a class of stiff Initial Value Systems. »,** in Neural Computing and Applications , 2021, 33(8), pp. 3363–3370, DOI: 10.1007/s00521-020-05201-1.

14. **"A neural network training algorithm for singular perturbation boundary value problems"**, Neural Computing and Applications (2021), (with T. E. Simos) https://doi.org/10.1007/s00521-021-06364-1

15. **Comparative study of FeedForward and Radial Basis Function Neural Networks for solving an Environmental Boundary Value Problem.** (2022), (with A. Donas, G. Galanis) Results in Applied Mathematics, 16 (2022) 100344.