

Michael Plexousakis

CONTACT INFORMATION	Department of Mathematics and Applied Mathematics University of Crete 71003 Heraklion, Greece	+30 281.039.3709 plex@uoc.gr users.tem.uoc.gr/~plex
EDUCATION	University of Tennessee, Knoxville <i>Doctor of Philosophy, Mathematics</i> Thesis: “An adaptive nonconforming finite element method for the nonlinear Schrödinger equation.” Advisor: Ohannes Karakashian. University of Tennessee, Knoxville <i>Master of Science, Mathematics</i> Thesis: “Parallel implementation of implicit Runge–Kutta methods.” Advisor: Ohannes Karakashian University of Crete, Heraklion <i>Diploma, Mathematics</i>	Dec 1996 Aug 1991 Nov 1987
ACADEMIC AND WORK EXPERIENCE	Department of Mathematics and Applied Mathematics, University of Crete <i>Assistant Professor</i> <i>Systems Manager</i> <i>Adjunct Assistant Professor</i> <i>Systems Manager</i> NADA, Royal Institute of Technology, Stockholm, Sweden <i>Postdoctoral Fellow</i> Department of Mathematics, University of Milan, Italy <i>Postdoctoral Fellow</i>	Jun 2010–Current Dec 2003–Jun 2010 Sep 2002–Aug 2005 Mar 2002–Aug 2002 Feb 2000–Dec 2001 Feb 1999–Dec 1999
RESEARCH INTERESTS	Numerical solution of partial differential equations, finite element and finite volume methods, adaptive algorithms, singular solutions of nonlinear equations, scientific computing and visualization, numerical weather prediction.	
RESEARCH AFFILIATIONS	Archimedes Center for Modeling, Analysis and Computations (ACMAC). Department of Applied Mathematics, University of Crete. Institute of Applied and Computational Mathematics, Foundation for Research and Technology, Hellas. Heraklion, Crete.	
RESEARCH GRANTS	Study of extreme weather phenomena in local regions and their impact to civil protection and the economy. Research Program “SYNERGASIA”, Greek Secretariat of Research and Technology, 2011–2014. Optimal Management of Dynamic Systems of the Economy and the Environment. Research Program “THALIS”, Section: Social, Administrative and Economical sciences, 2012–2014, Ministry of Education, Lifelong Learning and Religious Affairs. 2012–2014. Analysis, Modeling and Simulations of Complex and Stochastic Systems “AMOSICSS”. Research Program “THALIS”. Ministry of Education, Lifelong Learning and Religious Affairs. 2012–2015.	
CONFERENCES	International Conference on Applied Mathematics, 16–20 September 2013, Heraklion, Crete. Organizer (with N. Christakis, N. Chrysoulakis and G. Kossioris) of the mini symposium entitled Modeling and Computations in Atmospheric Sciences. The 11th European Finite Element Fair, May 31 and June 01 2013, Heraklion, Crete. Organizer with P. Chatzipantelides, T. Katsaounis, Ch. Makridakis, Ch. Tsogka and G. Zouraris. Workshop on Software Frameworks for Challenging Computational Problems, Archimedes Center for Modeling, Analysis and Computations (ACMAC), 14–18 January 2013, Heraklion, Crete. Organizer (with V. Harmandaris and T. Katsaounis). Modern Mathematical Methods in Science and Technology (M3ST), 26–28 August 2012, Kalamata, Greece (speaker). 5th Workshop on Numerical Methods for Evolution Equations, 24–25 September 2010, Heraklion, Crete (speaker). 12th International Conference on Meteorology, Climatology and Atmospheric Physics, COMECAP 2014 Heraklion, 28 May – 31 May 2014 (speaker).	

- G. Kossioris, M. Loulakis and M. Plexousakis, *Optimal Stochastic Control of Non Linear Systems: The Lake problem*. In preparation.
- N. Christakis, Th. Katsaounis, G. Kossioris and M. Plexousakis, *An analysis of WRF performance for the analysis of surface wind speeds over various Greek regions*. In preparation.
- N. Christakis, G. Kossioris and M. Plexousakis, *An evaluation of the WRF parametrization schemes for extreme weather events in Greece using high resolution terrain data*. In preparation.
- G. Kossioris, M. Plexousakis, Y. Vardas, A. Xepapadeas, *Optimal Pollution Control and Resource Management at Different Time Scales*. In preparation.
- D. A. Mitsoudis, Ch. Makridakis, and M. Plexousakis, *A standard Galerkin finite element method for the Helmholtz equation with artificial boundary conditions in a two dimensional waveguide*. To appear.
- D. C. Antonopoulou, M. Plexousakis, *Crank–Nicolson finite element discretizations for a two dimensional linear Schrödinger-type equation posed in a noncylindrical domain*. To appear.
- D. C. Antonopoulou, G. Karali, M. Plexousakis, and G. E. Zouraris, *Crank–Nicolson finite element discretizations for a two dimensional linear Schrödinger-type equation posed in a noncylindrical domain*. Math. Comp. **84** (2015), 1571–1598
- N. Christakis, G. Kossioris, T. Katsaounis and M. Plexousakis, *On the performance of the WRF Numerical Model over Complex Terrain on a High Performance Computing Cluster*. To appear in the Proceedings of the 16th IEEE International Conference on High Performance Computing and Communications, Paris, France, August 20–22, 2014. N. Benas, N. Chrysoulakis, N. Christakis, G. Kossioris and M. Plexousakis, *WRF parameterization updates based on recent and long-term satellite observations*. Conference Proceedings COMECAP 2014, ISBN-978-960-524-430-9.
- D. A. Mitsoudis, Ch. Makridakis, and M. Plexousakis, *Helmholtz Equation with Artificial Boundary Conditions in a Two-Dimensional Waveguide*. SIAM J. Math. Anal. **44**, (2012), no. 6, 4320–4344. doi: 10.1137/120864052.
- G. Kossioris, M. Plexousakis, A. Xepapadeas and A. de Zeeuw, *On the optimal taxation of common-pool resources*. J. Econom. Dynam. Control. **35**, (2011), no. 11, 1868–1879. doi: 10.1016/j.jedc.2011.05.007.
- N. M. Abukhdeir, D. G. Vlachos, M. Katsoulakis and M. Plexousakis, *Long-time integration methods for mesoscopic models of pattern-forming systems*. J. Comp. Phys. **230**, (2011), no. 14, 5704–5715. doi: 10.1016/j.jcp.2011.03.052
- I. Kyza, Ch. Makridakis and M. Plexousakis, *Error control for time-splitting spectral approximations of the semiclassical Schrödinger equation*. IMA J. Numer. Anal. **31**, 2011, no. 2, 416–441. doi:10.1993/imanum/drp044
- Th. Baxevanis, M. Plexousakis, *On the effect of fiber creep-compliance in the high-temperature deformation of continuous fiber-reinforced ceramic matrix composites*. Intern. J. of Solids and Structures **47**, (2010), 2487–2497. doi:10.1016/j.ijsolstr.2010.05.007
- D. C. Antonopoulou, M. Plexousakis, *Discontinuous Galerkin methods for the linear Schrödinger equation in non-cylindrical domains*. Numer. Math. **115**, (2010), no. 4, 585–608. doi: 10.1007/s00211-010-0296-5
- D. A. Mitsoudis, M. Plexousakis, *A Finite Element Method with Nonlocal Boundary Conditions for the Helmholtz Equation with Complex Wavenumber in Stratified Waveguides*. Acta Acustica united with Acustica, **95** (2009), no. 4, 753–756. doi: 10.3813/AAA.918203
- Th. Baxevanis, M. Plexousakis, *Estimation of base settlement from the surface profile: two-dimensional plane field of displacements*. Intern. J. for Numer. and Analytical Methods in Geomechanics, **33** (2009), no. 8, 1109–1121. doi: 10.1002/nag.760
- G. Kossioris, M. Plexousakis, A. Xepapadeas and A. de Zeeuw, *Feedback Nash equilibria for non-linear differential games in pollution control*. J. Econom. Dynam. Control, **32**, (2008), no. 4, 1312–1331. doi: 10.1016/j.jedc.2007.05.008
- G. Kossioris, M. Plexousakis and A. N. Yannacopoulos, *A Hamilton-Jacobi approach to the control of the trapping time of a soliton by an external potential*. Quart. Appl. Math. **63**, (2005), no. 2, 309–324.
- M. Plexousakis, G. E. Zouraris, *On the construction and analysis of high order locally conservative finite volume-type methods for one-dimensional elliptic problems*. SIAM J. Numer. Anal. **42**, (2004), no. 3, 1226–1260. doi: 10.1137/S0036142902406302
- P. Chatzipantelidis, Ch. Makridakis and M. Plexousakis, *A posteriori error estimates for a finite volume method for the Stokes problem in two dimensions*. Appl. Numer. Math. **46**, (2003), no. 1, 45–58. doi: 10.1016/S0168-9274(03)00011-4