Theodoros Katsaounis
Curriculum Vitae

Dept. of Math & Applied Mathematics
University of Crete
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April 2024

Personal Data

Date of Birth:	1/7/1965	Place of Birth:	Thessaloniki, Greece
Citizenship:	Greek	Marital Status:	Married, 3 children

Education

1994 **Ph.D**, *Dept. of Mathematics, Univ. of Tennessee*, Knoxville TN, USA.
Thesis: On fully discrete discontinuous Galerkin approximation for the incompressible Navier-Stokes equations
Advisor: Prof. Ohannes Karakashian

1991 **M.Sc**, *Dept. of Mathematics, Univ. of Tennessee*, Knoxville TN, USA.
Thesis: Efficient implementation of implicit Runge-Kutta methods on distributed and shared memory parallel architectures
Advisor: Prof. Ohannes Karakashian

1987 **B.Sc**, *Dept. of Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

Academic Positions

6/2020–currently **Professor**, *Dept. of Mathematics & Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

1/2015–1/2020 **Research Scientist**, *Computer, Electrical & Mathematical Science & Engineering, KAUST*, Thuwal, Saudi Arabia.

8/2009–06/2020 **Associate Professor**, *Dept. of Mathematics & Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

9/2002–Currently **Collaborative Faculty Member**, *Inst. of Applied and Computational Mathematics(IACM), FORTH*, Heraklion Crete, Greece.

3/2013–7/2013 **Visiting Professor**, *Modeling and Scientific Computing(MOX), Politecnico di Milano*, Milano, Italy, (Sabbatical leave).

9/2010–2/2011 **Visiting Professor**, *Institute for Computational and Applied Mathematics, Univ. of Muenster*, Muenster, Germany, (Sabbatical leave).

6/2007–9/2009 **Assistant Professor with tenure**, *Dept. of Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

3/2003–6/2007 **Assistant Professor**, *Dept. of Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

9/2002–3/2003 **Visiting Associate Professor**, *Dept. of Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

9/2001–8/2002 **Research Fellow**, *Département de Mathématiques et Applications, École Normale Supérieure(ENS)*, Paris, France.

1/2001–8/2001 **Visiting Associate Professor**, *Dept. of Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.

9/2000–12/2000	**Visiting Assistant Professor**, *Dept. of Mathematics, Univ. of Tennessee*, Knoxville TN, USA.
9/1999–8/2000	**Visiting Associate Professor**, *Dept. of Applied Mathematics, Univ. of Crete*, Heraklion Crete, Greece.
9/1998–8/1999	**Visiting Assistant Professor**, *Dept. of Mathematics, Univ. of Crete*, Heraklion, Crete, Greece.
3/1998–8/1998	**Postdoctoral Researcher**, *Dept. of Mathematics, Univ. of Crete and Institute of Applied and Computational Mathematics (IACM), FORTH*, Heraklion Crete, Greece.
9/1997–2/1998	**Postdoctoral Fellow**, *Département de Mathématiques et d' Informatique, École Normale Supérieure(ENS)*, Paris, France.
5/1996–8/1997	**Postdoctoral Researcher**, *Dept. of Mathematics, Univ. of Crete and Institute of Applied and Computational Mathematics (IACM), FORTH*, Heraklion Crete, Greece.
8/1988–8/1994	**Teaching Assistant**, *Dept. of Mathematics, Univ. of Tennessee*, Knoxville TN, USA.
9/1987–7/1988	**Research Assistant**, *Institute of Applied and Computational Mathematics (IACM), FORTH*, Heraklion Crete, Greece.
11/1994–4/1996	**Military Service**, *Mandatory military service in the Greek army.*

Honors-Awards

- Scholarship of the National Scholarship Foundation (IKY)(1984–1987) for excellent academic achievement. Univ. of Crete, Heraklion Greece
- Science Alliance Fellowship Award (1990–1994) for excellent academic achievement, Univ. of Tennessee Knoxville, Tennessee, USA

Research Interests

- **Numerical Methods for PDE's, Scientific Computing**.
  - *Finite element method (FEM)* : continuous and discontinuous FEM, adaptive methods, mesh and time step selection techniques, effective linear solvers (multigrid, Krylov type methods)
  - *Adaptive algorithms* : for localisation or singular phenomena (shocks, shear bands, blow-up, caustics) based on geometric and aposteriori estimators
  - *Finite Volume methods* : MUSCL and WENO type reconstructions, hybrid finite difference - finite volume discretizations
- **Application Areas**.
  Computational Fluid Dynamics, Conservation Laws, Advection-Reaction-Diffusion systems in Biology, Shear Band formation in metals, Linear and Nonlinear Schrödinger equations, Dispersive Wave propagation, Solar Cell Simulations

Funded Research projects, Grants

2024-2026	**Machine learning and Statistical forecasting for smart monitoring and performance optimization of PV systems**, *Saudi ARAMCO Saudi Arabia*, Budget : $400.000, PI.
2023-2025	**Modeling Transcription: an integrated approach to understand cancer-specific gene expression programs**, *HFRI(ELIDEK)*, In collaboration with IMBB, IACM-FORTH Budget : €130.000, PI.
2020-2022	**Machine Learning, Statistical Modelling and Uncertainty Quantification for PV Performance Output Prediction**, *Saudi ARAMCO Saudi Arabia*, IACM-FORTH Budget : $160.000, PI.
2018-2019	**Energy yield assessment of high efficiency c-Si PV technologies for the local climate**, *Saudi ARAMCO Saudi Arabia*, Budget : $150.000, Co-PI.
2017-2021	**Performance evaluation of a solar cell simulator in HPC environment : CRAY XC-40 "Shaheen" (2M Core Hours)**, *KAUST Supercomputing Laboratory, Saudi Arabia*, Budget : $102.000, Co-PI.

2012-2015	**Self adaptive methods for time dependent problems: Algorithms and Analysis(STADAPT)**, *Program "Excellence" in research of the Greek Secretariat for Research and Technology*, Budget : €150.000, Co-PI.
2012-2015	**Analysis of discrete, kinetic and continuum models for elastic and viscoelastic materials(DIKICOMA)**, *Program "Excellence" in research of the Greek Secretariat for Research and Technology*, Budget : €175.000, Collaborative Researcher.
2012-2015	**Advanced Numerical Techniques for Reaction Diffusion Models in Biology**, *Greek Secretariat for Research and Technology*, Budget : €150.000, Scientific advisor.
2011–2014	**AKAIPRO: Study of extreme weather events in Greece and their consequences in civil protection and the economy**, *Greek Secretariat for Research and Technology*, Total budget: €522.000, Evaluation and validation of the WRF model for predicting extreme weather phenomena over Greece, Co-Pi of the FORTH-Crete team.
2010–2014	**ACMAC : Archimedes Center for Modeling Analysis and Computation(www.acmac.uoc.gr)**, *FP7-REGPOT-2009-1*, Founding member, total budget: €2.590.000, A grant supporting the initiation of a Research Center within the Applied Mathematics Department of the University of Crete (hosting postdoctoral fellows, series of workshops and fostering collaboration with five excellence centers in Europe).
2006–2010	**DEASE: Differential Equations with Applications in Science and Engineering**, *Human Resources and Mobility (HMR), Marie Curie Action, Fellowship for Early Stage Research Training (EST)*, Budget of FORTH/UOC team : €350.000, Co-PI of the FORTH/UoC team and co-supervise two PhD candidates.
2005–2008	**Multiscale Problems and Applications**, *Pythagoras Project, Greek Secretariat for Research and Technology*, Budget €80.000, Co-PI and postdoc advisor.
2004–2008	**Modelling Mathematical Methods and Computer Simulation of Tumor Growth and Therapy**, *Research and Training Network, EU Project, MRTN-CT-2004-503661*, Total budget : €2.942.000 Euros, Co-PI of the FORTH-Crete team and postdoc advisor with budget €241.000.
2002–2005	**Hyperbolic and Kinetic Equations(HYKE)**, *Research and Training Network, EU Project HPRN-CT-2002-00282*, Total budget €1.500.000, Co-PI of the FORTH-Crete team with budget €190.000.
2002–2006	**Modelling and Computations in Wave Propagation**, *Marie Curie Development Host Fellowships, EU Project HPMD-CT-2001-00121*, Co-PI and postdoc advisor. Budget: €373.000.
1997–2001	**Viscosity solutions and their applications**, *Training and Mobility of Researchers(TMR), EU Project FMRX-CT98-0234*, (Postdoctoral Fellow).
1996–2000	**Hyperbolic Conservation Laws**, *Training and Mobility of Researchers(TMR), EU Project FMRX-CT96-0033*, (Postdoctoral Fellow).

Publications

Journal Publications

J1   *Fully discrete nonconforming finite element schemes for the nonstationary Navier–Stokes equations*, Journal of Numerical Mathematics(formerly East-West Journal of Numerical Mathematics) vol.6, no.4, pp.273-298, 1998

J2   *Modified structured central schemes for 2D hyperbolic conservation laws* (with D.Levy), Applied Math. Letters(AML) vol.12, no.6, pp.89-96, 1999

J3   *Finite volume relaxation schemes for the multidimensional conservation laws* (with Ch. Makridakis), Mathematics of Computation, vol.70, no.234, pp.533-553, 2001

J4   *Computation of High Frequency Fields near Caustics* (with G. Kosioris, G. Makrakis), Mathematical Models and Methods in Applied Sciences (M3AS), vol.11, no.2, pp.199-228, 2001

J5   *Adaptive Finite Element Relaxation Schemes for Hyperbolic Conservation Laws* (with Ch. Arvanitis, Ch. Makridakis), Mathematical Modelling and Numerical Analysis,(M2AN), vol.35, no.1, pp.17-34, 2001

J6   *High frequency limit of Helmholtz equations* (with JD. Benamou, F. Castela, B. Perthame), Revista Matematica Iberoamericana, vol.18, no.1, pp.187-209, 2002

J7   *Relaxation schemes for the shallow water equations* (with A. Delis), International Journal for Numerical Methods in Fluids(IJNMF), vol. 41, no.7, pp. 695-719, 2003

J8   *High Frequency Waves near Cusp Caustics* (with E. Kalligianaki, G. Makrakis), Quarterly of Applied Mathematics, vol. LXI, no.1, pp. 111-129, 2003

J9   *Upwinding sources at interfaces in conservation laws* (with B. Perthame, C. Simeoni), Applied Mathematics Letters(AML), vol.17, pp. 309-316, 2004

J10 *A generalized relaxation method for transport and diffusion of pollutant models in shallow water*, (with A.I. Delis), Computational Methods in Applied Mathematics(CMAM), vol.4, no.4, pp.410-430, 2004

J11 *First and Second order Estimates for the Upwind Source at Interface Method*, (with C. Simeoni), Mathematics of Computation, vol.74, no. 249, pp.103-122, 2005

J12 *Numerical solution of the two-dimensional shallow water equations by the application of relaxation methods*, (with A.I. Delis), Applied Mathematical Modelling, vol.29, no.8, pp.754-783, 2005

J13 *Numerical simulation of incompressible fluid flow using locally solenoidal elements* (with O. Karakashian), Computers and Mathematics with Applications(CMA), vol.51, no.9-10, pp.1551-1570, 2006

J14 *Load capacity and peak displacement in viscoelastic fiber bundles* (with Th. Baxevanis), Physical Review E, vol.75, 046104, 2007

J15 *Burst avalanches and inter-occurrence times in creep rupture* (with Th. Baxevanis), Europhysics Letters, vol.81, 24001, 2008

J16 *Scaling of the size and temporal occurrence of burst sequences in creep rupture of fiber bundles* (with Th. Baxevanis), European Physical Journal B, vol.61, no.2 pp.153-157, 2008

J17 *Effective equations for localization and shear band formation* (with A. Tzavaras), SIAM Journal on Applied Mathematics(SIAP), vol. 69, no. 6, pp. 1618-1643, 2009

J18 *Adaptive finite element computations of shear band formation* (with Th. Baxevanis, A. Tzavaras), Mathematical Models Methods In Applied Sciences (M3AS), vol.20, no.3, pp.423-448, 2010

J19 *Finite volume schemes for dispersive wave propagation and runup*, (with D. Dutykh and D. Mitsotakis), Journal of Computational Physics(JCP), vol. 230, no.8, pp.3035-3061, 2011

J20 *Three-points interfacial quadrature for geometrical source terms on nonuniform grids*, (with C. Simeoni), Calcolo, vol.49, no.3, pp.149-176, 2012

J21 *Finite volume methods for unidirectional dispersive wave models*, (with D. Dutykh and D. Mitsotakis), International Journal for Numerical Methods in Fluids)IJNMF), vol.71, pp.717-736, 2013

J22 *Aposteriori error control and adaptivity for Crank-Nicolson finite element approximations for the linear Schrödinger equation*(with I. Kyza), Numerische Mathematik, vol.129, no.1, pp.55-90, 2015

J23 *Regularized semiclassical limits: linear flows with infinite Lyapunov exponents* (with A. Athanassoulis and I. Kyza), Communications in Mathematical Sciences(JCMS), vol. 14, no.7, pp.1821-1858, 2016

J24 *Localization in inelastic rate dependent shearing deformations* (with M-G. Lee and A. Tzavaras), Journal of the Mechanics and Physics of Solids(JMPS), vol.98, no.1, pp.106-125, 2017

J25 *Emergence of coherent localized structures in shear deformations of temperature dependent fluids*, (with A.Tzavaras and J. Olivier), Archive for Rational Mechanics and Analysis(ARMA), vol.224, no.1, pp.173-208, 2017

J26 *2D simulation and performance evaluation of bifacial rear local contact c-Si solar cells under variable illumination conditions*, (with K. Kotsovos, I. Gereige, A. Al-Saggaf and A. Tzavaras), Solar Energy, vol.158, no.1, pp.34-41, 2017

J27 *On the reflection of solitons of the nonlinear Schrödinger equation* (with D. Mitsotakis), Mathematical Methods in the Applied Sciences, vol.41, no.3, pp.1013-1018, 2018

J28 *A posteriori error analysis for evolution nonlinear Schrödinger equations up to the critical exponent*, (with I. Kyza), SIAM J. Numerical Analysis(SINUM), vol.56, no.3, pp.1405-1434, 2018

J29 *Localization in adiabatic shear flow via geometric theory of singular perturbations*, (with M-G. Lee, and A. Tzavaras), Journal of Nonlinear Science, 2019

J30 *Performance evaluation of bifacial c-Si solar cells under actual conditions through 2D device simulations and outdoor measurements*, (with K. Kotsovos, I. Gereige, A. Basaheeh, M. Abdullah, A. Khayat, E. Al-Habshi, A. Al-Saggaf and A. Tzavaras), Renewable Energy, vol.143, pp. 1285-1298, 2019

J31 *Boussinesq-Peregrine water wave models and their numerical approximation*, (with D. Mitsotakis and G. Sadaka) Journal of Computational Physics, vol.417, 109579, 2020

J32 *A regularized shallow-water waves system with slip-wall boundary conditions in a basin: theory and numerical analysis*, (with S.Israwi, H. Kalisch, and D. Mitsotakis), Nonlinearity, vol.35, no.1, pp.750-786, 2022

J33 *A posteriori error estimators for discontinuous Galerkin method for diffusion problems, based on the hypercircle method*, (with D. AlSheikh), Arabian Journal of Mathematics, 2022

J34 *A novel, structure preserving, second order in time relaxation scheme for the Schrödinger-Poisson system*, (with A. Athanassoulis, I. Kyza and S. Metcalfe), J. Computational Physics(JCP), vol.490, 112307, 2023

J35 *Robust day-ahead solar forecasting with endogenous data and sliding windows*, (with Kamarianakis, Y., Pantazis, Y., Kalligiannaki, E., Kotsovos, K., Gereige, I., Abdullah, M., Jamal, A., Tzavaras, A.), Journal of Renewable and Sustainable Energy, vol.16, no. 2, 2024)

Conference Proceedings(Referreed)

P1 *High frequency limit of the Helmholtz equations*, (with JD. Benamou, F. Castela, B. Perthame), Séminaire: Équations aux Dérivées Partielles, 1999–2000, Exp. No. V, 27 École Polytech., Palaiseau, 2000

P2 *A discontinuous Galerkin method for the incompressible Navier-Stokes equations*,(with O. Karakashian), Proceedings of the International Symposium on the discontinuous Galerkin method, B. Cockburn, G.E. Karniadakis, C-W. Shu (eds). Springer Lecture Notes in Computational Science and Engineering 11, pp.157–166, 2000 (Invited paper)

P3 *Relaxation models and finite element schemes for the shallow water equation*, (with Ch. Makridakis), Hyperbolic Problems: Theory, Numerics, Applications, Proceedings HYP2002, pp. 621-631 T. Hou, E. Tadmor, Eds, Springer Verlag, 2003

P4 *Second order approximation of the viscous Saint-Venant system and comparison with experiments*, (with C. Simeoni), Hyperbolic Problems: Theory, Numerics, Applications, Proceedings HYP2002, pp.633-644, T. Hou, E. Tadmor, Eds, Springer Verlag, 2003

P5 *Computational methods for 2D shallow water flows based on relaxation schemes* (with A.I. Delis), Proceedings HERCMA 2003

P6 *Relaxation approximations to shallow water and pollutant transport equations* (with A.I. Delis), Proceedings of 17th IMACS World Congress on Scientific Computation, Applied Mathematics and Simulation, 2005

P7   *A finite element method computing shear band formation*, (with Th. Baxevanis, A. Tzavaras), Hyperbolic Problems: Theory, Numerics, Applications, Proceedings HYP2004, vol.I, pp.295-302, Yokohama Publishers, 2006

P8   *Stability and convergence of relaxation finite element schemes for the incompressible Navier-Stokes equations*, (with Ch. Makridakis, C. Simeoni), Hyperbolic Problems: Theory, Numerics, Applications, Procd. HYP2004, vol. II, pp.87-92 Yokohama Publishers, 2006

P9   *Localization and shear bands in high strain rate plasticity*, (with A. Tzavaras), IMA Proc. on "Nonlinear Conservation Laws and Applications", vol.153, pp.365-378, 2010

P10   *Finite volume schemes for Boussinesq type equations*, (with D. Dutykh and D. Mitsotakis), Proceedings of Colloque EDP-Normandie, Caen, France, pp.15-21, 2011

P11   *Dispersive wave runup on non-uniform shores*, (with D. Dutykh and D. Mitsotakis),Finite volumes for complex application VI – Problems & Perspectives. Springer Proceedings in Mathematics, vol.4, pp.389 - 397, 2011

P12   *On of the Performance of the WRF Numerical Model over Complex Terrain on a High Performance Computing Cluster*, (with N. Christakis, G. Kossioris and M. Plexousakis), Proceedings of High Performance Computing and Comminications (HPCC), Paris, France, 2014

P13   *Localization of Adiabatic Deformations in Thermoviscoplastic Materials* (with M-G. Lee and A. Tzavaras), Proceedings HYP2016 : Theory, Numerics and Applications of Hyperbolic Problems II, pp.269-280, Springer, 2018

P14   *Performance Assessment of various PV module types under desert conditions through device simulations and outdoor measurements* (with K. Kotsovos, I. Gereige, A. Basaheeh, M. Abdullah, A. Khayat, E. Al-Habshi, A. Al-Saggaf, and A. Tzavaras), Proceeding of 36th European Photovoltaic Solar Energy Conference and Exhibition(EUPVSEC2019), pp.874-879, 2019

P15   *Seasonal Performance Assesment of Various PV Technologies in a Desert Climate Through Device Simulations and Outdoor Measurements* (with K. Kotsovos, I. Gereige, A. Basaheeh, M. Abdullah, A. Khayat, E. Al-Habshi, A. Al-Saggaf, and A. Tzavaras), Proceeding of 37th European Photovoltaic Solar Energy Conference and Exhibition(EUPVSEC2020), pp.1112 - 1116, 2020

P16   *Estimating Solar Cell Operating Temperature via Deep Neural Networks* , (with G. Papadomichelakis, K. Kotsovos, I. Gereige, M. Abdullah, A. Jamal and A. Tzavaras), Proceeding of 39th European Photovoltaic Solar Energy Conference and Exhibition(EUPVSEC2022), 8th World Conference on Photovoltaic Energy Conversion(8th WCPEC), pp. 629-631, 2022)

P17   *Day Ahead Forecasting of Solar Irradiance: KNN-Based Ensembles* , (with Y. Kamarianakis, Y. Pantazis, E. Kalligiannaki, K. Kotsovos, I. Gereige, M. Abdullah, A. Tzavaras),Proceeding of 39th European Photovoltaic Solar Energy Conference and Exhibition(EUPVSEC2022), 8th World Conference on Photovoltaic Energy Conversion(8th WCPEC), pp.1248-1252, 2022)

P18   *Performance Evaluation and Comparison of Solar Cell Technologies Based on Historical Data* , (with Y. Pantazis, E. Kalligiannaki, Y. Kamarianakis, K. Kotsovos, I. Gereige, M. Abdullah, A. Tzavaras), Proceeding of 39th European Photovoltaic Solar Energy Conference and Exhibition(EUPVSEC2022), 8th World Conference on Photovoltaic Energy Conversion(8th WCPEC), pp. 691-694, 2022)

P19   *Efficiency Evaluation and Comparisons of Solar Cell Technologies Based on Measurements from the Arabian Peninsula*, (with Y. Pantazis, E. Kalligiannaki, Y. Kamarianakis, K. Kotsovos, I. Gereige, M. Abdullah, A. Jamal, A. Tzavaras), Proceedings of EuroSun2022, Kassel, Germany, 2022

P20   *KNN-Based Ensembles for Day-Ahead Forecasting of Solar Power Outputs*, (with Y. Pantazis, E. Kalligiannaki, Y. Kamarianakis, K. Kotsovos, I. Gereige, M. Abdullah, A. Jamal, A. Tzavaras), Proceedings of EuroSun2022, Kassel, Germany, 2022

P21 *Day-Ahead Forecasting of Solar Irradiance & PV Power Output Through Statistical Machine Learning Methods*, (with Kamarianakis, Y., Pantazis, Y., Kalligiannaki, E., Kotsovos, K., Gereige, I., Abdullah, M., Jamal, A., Tzavaras, A.), Proceedings Smart Grid (SASG), Saudi Arabia, 2022

P22 *Self-similar axisymmetric flows with swirl* (with I. Mousikou and A. Tzavaras), Proceedings HYP2022 : Theory, Numerics and Applications of Hyperbolic Problems, 2024 (to appear)

Advising

- **Internship Programme**.
  - 2002 – 2014 : Advisor of several undergraduate students through IACM's FORTH internship programme
- **Diploma Theses**.
  - M. Printezis, 2010
  - E. Paraskoulakis, 2014
  - S. Kollias, 2015
  - Ch. Tsimperi, 2022
- **M.Sc. Theses**.
  - V. Stefa, 2005, Univ. of Crete, Greece
  - K. Kafousas, 2006, Univ. of Crete, Greece
  - E. Psycharis, 2010, Univ. of Crete, Greece
  - I. Mousikou, 2016, KAUST, Saudi Arabia
  - L. Christofi, 2020, Univ. of Crete, Greece
  - G. Papadomichelakis, 2021, Univ. of Crete, Greece
- **Ph.D. Theses**.
  - F. Karakatsani, 2006, Univ. of Crete, Greece, (Co-Advisor), (currently : Assistant Professor, Univ. of Ioannina, Greece)
  - N. Sfakianakis, 2009, Univ. of Crete, Greece, (Co-Advisor), (currently : Lecturer, Univ. of St. Andrews, UK)
  - I. Kyza, 2009, Univ. of Crete, Greece, (Co-Advisor), (currently : Lecturer at Univ. of Dundee, UK)
  - G. Kounadis, 2020, Univ. of Athens, Greece, (Co-Advisor), (currently : Postdoctoral Student at KAUST, Saudi Arabia)
  - I. Mousikou, KAUST, Saudi Arabia, 2023, (Co-Advisor)
- **Postdocs**.
  - Ch. Simeoni, 2002–2003, (currently : Maitre de Conference, Univ. Nice, France)
  - Th. Baxevanis, 2005–2008, (currently : Associate Professor, U. of Huston, USA)
  - I. Kyza, 2012-2013, (currently : Lecturer, Univ. of Dundee, UK)
  - G. Kounadis, 2021-currently, KAUST Saudi Arabia, and IACM-FORTH, Greece
- **Habilitation**.
  - Mehmet Ersoy, 2020, Rapporteur (currently : Maitre de Conference, Univ. of Tulon, France)

Professional Activities

- **Organization of Workshops and Conferences**.
  - *Discontinuous Galerkin Methods for Partial Differential Equations*, September 26–28, 2011, Heraklion, Greece, (member of the organizing committee)
  - *Cell biology and physiology: PDE models*, October 4–6, 2012, Heraklion, Greece, (member of the organising committee)
  - *Scientific and High Performance Computing*, January 14–18, 2013, Heraklion, Greece, (member of the organising committee)
  - *Minisymposium on Numerical Methods for P.D.E's, part of "ACMAC's International Conference on Applied Mathematics"*, September 16–20, 2013, Heraklion, Greece, (organiser)
  - Conference on *Nonlinear Partial Differential Equations in the Applied Sciences*, November 27-30, 2018, KAUST, Thuwal, Saudi Arabia, (member of the organising committee)
  - Workshop on *Modelling of nonlinear dispersive waves: Mathematical theory and numerical approximation*, May 27-29, 2019, Castro Urdiales, Spain, (member of the organising committee)

- **Review work**.
  - Reviewer for *Applied Numerical Mathematics*
  - Reviewer for *Applied Mathematics and Computations*
  - Reviewer for *AMS-Mathematical Reviews/MathSciNet*
  - Reviewer for *IEEE Journal of Photovoltaics*
  - Reviewer for *IMA Journal of Numerical Analysis*
  - Reviewer for *Int. J. for Numerical Methods in Fluids*
  - Reviewer for *Journal of Computational Physics*
  - Reviewer for *Journal of Computational and Applied Mathematics*
  - Reviewer for *Mathematical Methods in Applied Sciences*
  - Reviewer for *Mathematical Modeling and Numerical Analysis (M2AN)*
  - Reviewer for *Numerical Methods for Partial Differential Equations*
  - Reviewer for *SIAM J. of Numerical Analysis*
  - Reviewer for *SIAM J. of Scientific Computing*

Short term visits(last 5 years)

June 2015	University of Chester, Chester, UK, (1 week)
July 2015	University of Dundee, Dundee, UK, (1 week)
November 2015	University of Wisconsin, Madison, USA, (2 weeks)
May 2016	University of Victoria, Wellington, New Zealand, (2 weeks)
October 2016	National Technical University of Athens, Athens, Greece (1 week)
February 2017	Politecnico di Milano (MOX), Milan, Italy (1 week)
April 2018	SUSTech, Shenzhen, China (1 week)
June 2018	University of Dundee, Dundee, UK (1 week)
April 2019	Univ. of Tennessee, USA(1 week)
May 2022	University of Dundee, Dundee, UK, (1 week)
February 2023	KAUST, Thuwal, Saudi Arabia, (1 week)

Invited talks(last 5 years)

September 2015	SciCADE, Univ. of Potsdam, Potsdam, Germany
November 2015	University of Wisconsin, Madison, USA
February 2016	American Univ. of Sharjah, Sharjah, UAE
May 2016	University of Victoria, Wellington, New Zealand
June 2016	MAFELAP 2016, Brunel Univ. London, London, UK
October 2016	NTUA, Athens, Greece
February 2017	Politecnico di Milano, MOX, Milano, Italy
April 2017	American Univ. of Sharjah, Sharjah, UAE
May 2017	University of Loughborough, Loughborough, UK
September 2017	SciCADE, Univ. of Bath, Bath, UK
April 2018	SUSTech, Shenzhen, China
May 2018	University of Athens, Athens, Greece
May 2018	WPI, Vienna, Austria
June 2018	University of Athens, Athens, Greece
July 2018	IACM - FORTH, Heraklion, Greece
March 2019	FEF 2019, Chicago, USA
April 2019	Univ. of Tennessee, Knoxville, USA
September 2019	DEA 2019, Krakow, Poland
September 2019	EUPVSEC 2019, Marseille, France
September 2021	IACM - FORTH, Heraklion, Greece
February 2023	KAUST, Thuwal, Saudi Arabia

Teaching Experience

Dept. of Mathematics, Univ. of Tennessee

1988–1994   Courses taught include : Precalculus, Calculus I,II,III, Linear Algebra, Ordinary Differential Equations, Numerical Analysis

Dept. of Applied Mathematics, Univ. of Crete

1997– 2021   I have taught continuously several undergraduate and graduate courses including: *Introduction to UNIX and the FORTRAN, C and Python programming languages, Calculus I, Analysis I, Numerical Analysis, Functional Analysis, Numerical Algorithms, Numerical methods for ODE's, Numerical methods for PDE's, Numerical simulation and applications, Numerical Linear Algebra, Parallel Processing, Computational Fluid Dynamics, Scientific Computing, Mathematics of Machine Learning*

Administration Experience

University of Crete, Dept. of Applied Mathematics

- 9/2007 – 8/2008 : Member of University Senate
- 9/2011 – 12/2012 : Member of University Senate
- 9/2011 – 9/2013 : Associate Head of Department
- 2002 – 2008 : Coordinator, Undergraduate Programme Committee
- 2007 – 2013 : Coordinator, Visitors Hiring Committee
- 2007 – 2014 : Co-organizer of weekly Applied and Numerical Analysis seminar
- 2006 – 2010 : Coordinator, Department's Internship programme
- 2006 – 2010 : Coordinator, IT committee
- 2007 – 2023 : Member of several hiring committees
- 2020 – 2022: Director, Graduate Programme on Applied and Computational Mathematics
- 2020 – 2024 : Member, Scientific Council IACM, FORTH, Greece
- 2022 – 2024: Director, Graduate Programme on Data Analysis & Machine-Statistical Learning

Computer skills

Programming Languages	C, C++, Python, Fortran	Parallel Computing	OpenMP, MPI
Scientific Computing	FreeFem++, FeniCS, DUNE, deal.II, Matlab, Mathematica, Maple		

Languages

Greek:	Native	English:	Fluent