

Stavros Anastassiou

Biographical notes

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PERSONAL DATA

DATE OF BIRTH: March 14th, 1981, CITIZENSHIP: Greek, MARITAL STATUS: Single

STUDIES

- 2012 **PhD**, Mathematics Department, University of Patras, Greece.
Thesis title: *On the topological classification of dynamical systems*.
- 2007 **MSc**, Mathematics Department, University of Patras, Greece.
Title of dissertation: *The seven elementary catastrophes and the universal unfolding theory*.
- 2004 **BSc (Hons)**, Department of Mathematics, University of Patras, Greece.
Title of dissertation: *Iterated function systems*.

ACADEMIC POSITIONS

- OCT. 2017–JUL. 2023 **Teaching Associate** Hellenic Open University, (Mathematics for Computer Science)
- FEBR. 2021–JUL. 2023 **Teaching Associate** Dept. of Mathematics, Un. of West Macedonia (Calculus I, Calculus III, Calculus IV, Algebra I, Algebra II, Complex Analysis, Differential Geometry)
- FEBR. 2023–JUN 2023 **Teaching Associate** Dept. of Mathematics, Aristotle University of Thessaloniki (Calculus II, Topology of Metric Spaces)
- MAR. 2022–JUN. 2022 **Teaching Associate** Dept. of Mathematics, Aristotle University of Thessaloniki (Calculus I, Topology of Metric Spaces)
- FEBR. 2021–JUL. 2021 **Teaching Associate** Dept. of Mathematics, Un. of Patras (Real Analysis)
- FEBR. 2021–JUL. 2021 **Teaching Associate** Dept. of Biosystems Science, Un. of Patras, (Mathematics II)
- OCT. 2019 – AUG 2020 **Teaching associate**, Department of Biosystems Science, University of Patras (Mathematics I, Mathematics II)
- MARCH 2019 – AUG 2019 **Teaching associate**, Department of Mathematics, University of Patras (Algebra I, Complex Analysis)
- OCT. 2016 – SEPT. 2017 **Teaching associate**, Department of Mathematics, University of Patras (Analytical Mechanics, Chaos and Fractals)

RESEARCH INTERESTS

- DYNAMICAL SYSTEMS Analytical classification of vector fields and diffeomorphisms
- DIFFERENTIAL EQUATIONS Local and global analysis of systems of differential and difference equations
- APPLICATIONS Analytic study of specific systems stemming from the geometry and the sciences.

PUBLICATIONS

- JOURNALS [14] V Rothos, S Anastassiou, K Chadjifotinou, *Stationary solitons in discrete nonlinear Schrödinger with non-nearest neighbour interactions*, Proc.Royal Soc.A, 48120240539, 2025.
- [13] S Anastassiou, *Singularities of 3-d vector fields preserving the form of Martinet*, Theoretical and Mathematical Physics, 220, 1061-1069, 2024.
- [12] S Anastassiou, *Local models for smooth vector fields of the line*, P.D.E.s in Appl.Math., 10, 100719, 2024.
- [11] S Anastassiou, *Bernoulli shifts in predator-prey mappings*, Theoretical and Mathematical Physics, 212(1), 932-941, 2022.
- [10] S Anastassiou and I Chrysikos, *Ancient solutions of the homogeneous Ricci flow on flag manifolds*, Extracta Mathematicae, 36(1), 99-145, 2021.
- [9] S Anastassiou, *Complicated behaviour in cubic Hénon maps*, Theoretical and Mathematical Physics, 207(2), 572-579, 2021.
- [8] K Katsios and S Anastassiou, *Darboux polynomials and global phase portraits for the D_2 vector field*, J.Math.Anal.and Applications, 475, 32-40, 2019.
- [7] S Anastassiou, T Bountis and A Bäcker, *Recent results on the dynamics of higher dimensional Hénon maps*, Regular and Chaotic Dynamics, 23(2), 161-177, 2018.
- [6] S Anastassiou, T Bountis and A Bäcker, *Homoclinic points in 2-D and 4-D maps via the Parametrization Method*, Nonlinearity, 30, 3799-3820, 2017.
- [5] S Anastassiou, *Dynamical systems on the Liouville plane and the related strictly contact systems*, Regular and Chaotic Dynamics, 21(7-8), 862-873, 2016.
- [4] S Anastassiou, T Bountis and S Pnevmatikos, *Quadratic vector fields on R^3 equivariant under the D_2 symmetry group*, International Journal of Bifurcations and Chaos, 23(1), 1350017, 2013.
- [3] S Anastassiou, T Bountis and S Pnevmatikos, *Classification of dynamical systems based on a decomposition of their vector fields*, Journal of Differential Equations, 253, 2252-2262, 2012.
- [2] S Anastassiou and I Chrysikos, *The Ricci flow approach to homogeneous Einstein metrics on flag manifolds*, Journal of Geometry and Physics, 61, 1587-1600, 2011.
- [1] S Anastassiou, T Bountis and Y Petalas, *On the topology of the Lü attractor and related systems*, Journal of Physics A:Mathematical and Theoretical, 41, 485101, 2008.
- CONFERENCES
- PROCEEDINGS [1] T Bountis, H Christodoulidi and S Anastassiou, *Nurve pulse propagation in a chain of FHN nonlinear oscillators*, AIP Conference Proceedings, 1076, 13, 2008.
- PUBLISHED TEXTS [1] S Anastassiou, *Analysis and calculations*, Advanced calculations and analysis, editorial article, 1, 2016.

BOOKS

- [1] “Dynamical Systems”, S Anastassiou and T Bountis, Pnevmatikos Publications, Athens 2019 (in Greek).

PARTICIPATION IN RESEARCH PROGRAMMS

- 2014 “Nonlinear wave dynamics and control in complex photonic structures” (06.10.2014-05.12.2014).
- 2011 “Maths-Bio-Phys network” (01.01.2011-31.10.2011).
- 2010 “Maths-Bio-Phys network” (01.05.2010-31.07.2010).
- 2009 “Maths-Bio-Phys network”, (01.10.2009-30.11.2009).
- 2007 “Cooperation of Greece and Egypt: Mathematical study and applications of control and synchronization” (01.03.2007-29.09.2008).

PRESENTATIONS IN CONFERENCES

LECTURES

- 2022 “Dynamical Systems: a mathematical approach”, “Summer School - Conference on Dynamical Systems and Complexity”, Crete, Greece.
- 2021 “Ancient solutions of the homogeneous Ricci flow on flag manifolds”, “Workshop on Compact Homogeneous Einstein Manifolds” (online edition), Córdoba, Argentina.
- 2020 “Local classification of dynamical systems on the Liouville plane”, Lecture given for “16th International Workshop on Real and Complex Singularities” (online edition), São Carlos, Brazil.
- 2020 “Complicated behaviour in some Hénon type maps”, Lecture given for “2nd International Conference on Integrable Systems and Nonlinear Dynamics”, Yaroslavl, Russia (online participation).
- 2019 “Dynamics of vector fields in dimensions 1, 2 and 3”, Lecture given for “Dynamical Systems and Complexity Summer School and Conference”, Athens.
- 2017 “Locating homoclinic orbits in generalised Hénon maps”, Lecture for the: “Mathematical Physics and Integrable Systems Workshop”, Patras, Greece.
- 2017 “Hyperbolic Theory of Dynamical Systems: A short introduction with a view toward examples”, Lecture for the Summer School: “Dynamical Systems and Complexity”, Volos, Greece.
- 2016 “Dynamical systems on the Liouville plane”, Lecture for the Workshop: “Mathematical Physics and Integrable Systems Workshop”, Kastellokampos, Patra.
- 2011 “Quadratic vector fields on R^3 invariant under the D_2 symmetry group”, Lecture for the conference: “Dynamical Systems, Jet Theory and Quadratic Fields”, University of Iasi, Romania.
- 2009 “Sphere-preserving vector fields and the classification of dynamical systems”, Lecture for the conference: “Algebra, Geometry and Mathematical Physics Conference”, Stefan Banach International Mathematical Center, Poland.

POSTERS

- 2010 “ D_2 -Symmetric Systems”, “Nonlinear Dynamics: Conference Held in Honour of Tassos Bountis 60th Birthday”, Salonika, 12-16 July.
- 2006 “Topology of Chaos and Applications”, at the conference: “Complexity and Nonlinear Dynamics”, Salonika, 10-22 July.

RESEARCH VISITOR

- 2019 University of Hradec Králové, Czech Republic, working with Prof. I Chrysikos.
- 2008 Assiut University, Egypt, working with Professor Gamal Mahmut.
- 2007 Université de Rouen, France, working with Professor Cristophe Letellier.

CONFERENCE ORGANISATION

- 2010 Organizing committee for Nonlinear Dynamics: Conference Held in Honour of Tassos Bountis 60th Birthday, Salonika, 12-16 July 2010.

2004 Organizing committee *Complexity in science and in society conference*, Patras-Olympia.

PARTICIPATION IN CONFERENCES

- 2006 *Group Theory and Dynamics*, , *International Center of Theoretical Physics, Trieste, Italy*.
2005 *Nonlinear science and complexity*, Volos, 18-30 July.
2003 *Nonlinear dynamics: chaos and complexity*, Chalkida, 14-24 July.

SCIENTIFIC ACTIVITIES

- [1] Reviewer, for the A.M.S.
[2] Referee, for Discrete and Continuous Dyn.Systems, J.Phys.A Math. and Theoretical, Math.Physics Analysis and Geometry, Int.J.Bifurcation and Chaos, Qualitative Theory of Dyn.Systems, Physica Scripta...

OTHER SKILLS

LANGUAGES Greek: native speaker, English: fluent speaker, German: partial knowledge
COMPUTER SKILLS Mathematica, Maple, L^AT_EX

OTHER INTERESTS

History and philosophy of Mathematics and the Sciences