

SYMEON PAPADIMITROPOULOS

Technion - Israel Institute of Technology, Israel
Faculty of Aerospace Engineering
Date of Birth: 9 June 1987
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EDUCATION

- **Ph.D.** in Applied Mathematics, University of Crete, Greece. Awarded: July 2018.
Thesis topic: *Imaging in waveguides*
Advisors: Prof. Chrysoula Tsogka and Prof. Dimitrios Mitsoudis
- **M.Sc.** in Mathematical Modeling and Computational Techniques, University of Crete, Greece.
Awarded: July 2015.
- **B.Sc.** in Computational Mathematics and Software Development, University of Crete, Greece.
Awarded: November 2012.

RESEARCH INTERESTS

- Absorbing boundary conditions
- Numerical methods for PDEs
- Wave propagation and applications to imaging
- Underwater acoustics
- Inverse problems

PROFESSIONAL APPOINTMENTS

- Post-doctoral fellow, Faculty of Aerospace Engineering, Technion – Israel Institute of Technology. October 2018 - present

AWARDS & HONORS

- Scholarship awarded from the Stavros Niarchos Foundation (SNF), 2017 – 2018.

LONG TERM VISITS

- Semester Program on “Mathematical and Computational Challenges in Radar and Seismic Reconstruction”, Fall 2017, ICERM/Brown University, U.S.A.

ACADEMIC & RESEARCH EXPERIENCE

TEACHING ASSISTANSHIPS (in University of Crete)

- Programming II (Python), Spring 2017
- Numerical Linear Algebra, Fall 2016
- Numerical Solution of PDEs, Fall 2015
- Introduction to Programming, Spring 2012 (C), Fall 2013 (Python)
- Numerical Solution of ODEs, Spring 2011, 2013, 2014, 2015
- Numerical Analysis, Fall 2010, 2011, 2012
- MATLAB for Calculus II, Spring 2010

COURSE PROJECTS

- **Numerical Solution of Partial Differential Equations:** *Finite Elements Method for the Laplace Equation*
- **Mathematical Modeling:** *N interacting vortices*
- **Game Theory:** *Highest and Lowest Unique Bid Auctions*
- **Introduction to Monte Carlo Methods:** *Monte Carlo methods for imaging*
- **Scientific Computing:** *Strang splitting for the Gross-Pitaevskii equation*

PUBLICATIONS

JOURNAL PUBLICATIONS

- C. Tsogka, D. A. Mitsoudis, **S. Papadimitropoulos**, *Imaging extended reflectors in a terminating waveguide*, SIAM Journal on Imaging Science, 11(2), 1680–1716, 2018.
- C. Tsogka, D. A. Mitsoudis and **S. Papadimitropoulos**, *Partial-aperture array imaging in acoustic waveguides*, Inverse Problems, Vol. 32, p. 125011 (31pp), 2016.
- C. Tsogka, D. A. Mitsoudis and **S. Papadimitropoulos**, *Selective imaging of extended reflectors in two-dimensional waveguides*, SIAM J. Imaging Sci., Vol. 6, 2714–2739, 2013

CONFERENCE PUBLICATIONS

- **S. Papadimitropoulos**, C. Tsogka, D. A. Mitsoudis, *Imaging in three-dimensional terminating waveguides with partial-aperture data*, Proceedings of the 14th International Conference on Mathematical and Numerical Aspects of Wave Propagation, Vienna, Austria, August 25-30, 2019.
- C. Tsogka, D.A. Mitsoudis, **S. Papadimitropoulos**, *Imaging extended reflectors in a terminating waveguide*, Proceedings of the 6th European Conference on Computational Mechanics, Glasgow, United Kingdom, June 11 - 15, 2018.
- C. Tsogka, D. A. Mitsoudis, **S. Papadimitropoulos**, *Imaging extended reflectors in two-dimensional waveguides*, Proceedings of the 5th European Conference on Computational Mechanics, Barcelona, Spain, June 20 - 25, 2014.
- C. Tsogka, D. A. Mitsoudis, **S. Papadimitropoulos**, *Imaging extended reflectors in a two-dimensional waveguide*, 11th International Conference on Mathematical and Numerical Aspects of Waves, June 2013, Gammarth, Tunisia

UNDER PREPARATION

- **S. Papadimitropoulos**, C. Tsogka and D. A. Mitsoudis, *Partial-aperture array imaging in three-dimensional waveguides*.

THESES

- Ph.D. Thesis: *Imaging in waveguides*.
- M.Sc. Thesis: *Partial array imaging of extended reflectors in two-dimensional waveguides*
- B.Sc. Thesis: *Imaging of extended reflectors in two-dimensional waveguides*.

PRESENTATIONS

ORAL PRESENTATIONS

- *Imaging in three-dimensional terminating waveguides with partial-aperture data*, 14th International Conference on Mathematical and Numerical Aspects of Wave Propagation, Vienna, Austria, August 25-30, 2019.
- *Imaging extended reflectors in a terminating waveguide*, Graduate Student-Postdoc Seminar Series, ICERM Semester Program on “Mathematical and Computational Challenges in Radar and Seismic Reconstruction”, November 30 2017, ICERM/Brown University, U.S.A.
- *Imaging extended reflectors in a terminating waveguide*, Franco-German Summer School on Inverse Problems and Imaging, September 18 - 22 2017, Bremen, Germany
- *Selective imaging of extended reflectors in a 2D waveguide*, MathMods Summer School on Mathematical Models for Social Innovation - Modelling Earthquakes, June 23 - July 4 2014, L'Aquila, Italy

POSTER PRESENTATIONS

- *Imaging extended reflectors in a terminating waveguide*, Workshop on “Recent Advances in Seismic Modeling and Inversion: From Analysis to Applications”, November 6 - 10 2017, ICERM/Brown University, U.S.A.
- *Imaging extended reflectors in a terminating waveguide*, Workshop on “Mathematical and Computational Aspects of Radar Imaging”, October 16 - 20 2017, ICERM/Brown University, U.S.A.
- *Imaging extended reflectors in a terminating waveguide*, Workshop on “Waves and Imaging in Random Media”, September 25 - 29 2017, ICERM/Brown University, U.S.A.
- *Imaging of extended reflectors in two-dimensional waveguides*, Franco-German Summer School on Inverse Problems and PDEs, October 7 - 11 2013, Bremen, Germany
- *Imaging of extended reflectors in two-dimensional waveguides*, Workshop on “Waves and imaging in complex media” June 11 - 15 2012, Heraklion, Greece

PARTICIPATION IN CONFERENCES, WORKSHOPS & SUMMER SCHOOLS

CONFERENCES

- “14th International Conference on Mathematical and Numerical Aspects of Wave Propagation”, Vienna, Austria, August 25-30, 2019.
- “International Conference on Applied Mathematics”, September 16 – 20 2013, Heraklion, Greece

WORKSHOPS

- “The 11th European Finite Element Fair”, May 31 – June 1, 2013, Heraklion, Greece
- “Waves and imaging in complex media”, June 11 - 15 2012, Heraklion, Greece
- “Wave propagation in complex media and applications”, May 7 – 11 2012, Heraklion, Greece
- “Discontinuous Galerkin Methods for Partial Differential Equations”, September 26 – 28 2011, Heraklion, Greece
- “Modern Techniques in the Numerical Solution of Partial Differential Equations”, September 19 – 23 2011, Heraklion, Greece
- “Coarse-graining of many-body systems: analysis, computations and applications”, June 27 – July 1 2011, Heraklion, Greece
- “Continuum and kinetic methods in the theory of shocks, fronts, dislocations and interfaces”, June 20 – 24 2011, Heraklion, Greece
- “Women in Applied Mathematics”, May 2 – 5 2011, Heraklion, Greece

SUMMER SCHOOLS

- Franco-German Summer School on *Inverse Problems and Imaging*, September 18 - 22 2017, Bremen, Germany
- DENORMS Action Training School on *Sound waves in metamaterials and porous media*, September 26 - 30 2016, Prague, Czech Republic
- Franco-German Summer School on *Inverse Problems for waves*, August 24 - 28 2015, Paris, France
- MathMods Summer School on *Mathematical Models for Social Innovation - Modelling Earthquakes*, June 23 - July 4, 2014 L'Aquila, Italy
- Franco-German Summer School on *Inverse Problems and PDEs*, October 7 - 11 2013, Bremen, Germany
- MathMods Intensive Programme in *Mathematical Models in Seismology*, July 8 - 19 2013, L'Aquila, Italy
- 9th Summer School in Mathematics, July 23 - 27 2012, Heraklion, Greece
- 8th Summer School in Mathematics, July 18 - 27 2011, Heraklion, Greece

TECHNICAL SKILLS

- Programming Languages: C, C++, Fortran, Julia, Python
- Tools: MATLAB, Linux shell scripts
- Typesetting Tools: L^AT_EX, Microsoft Office, OpenOffice
- Operating Systems: Linux, Windows, OS X

LANGUAGES

- **Greek:** Native
- **English:** Michigan Proficiency (ECPE)

PERSONAL INTERESTS

Martial Arts Tricking, Canyoning, Caving

REFERENCES

Dimitrios A. Mitsoudis

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Chrysoula Tsogka

Professor, Applied Mathematics

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