

NADIA CHOUAIEB
Ecole Noationale d'Ingénieurs de Tunis
Université de Tunis El Manar
B.P. 37, 1002 Tunis-Blvédère, Tunisia
E-mail: nadia.chouaieb@enit.utm.tn

PERSONAL DATA

EDUCATION & DIPLOMAS

- January 2003** Thèse Docteur ès Sciences en Mathématiques Appliquées, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.
- January 1999** Master of Sciences in Mechanics, Rutgers University, U.S.A.
- 1998—1999** Graduate Fellowship, Molecular Biophysics Program, Rutgers & National Institutes of Health.
- 1996--1998** Excellent Graduate Fellowship, Graduate Program in Mechanics, Rutgers.
- July 1992** Diplôme d'Etudes Approfondies en Mécanique Appliquée, Ecole Nationale d'Ingénieurs de Tunis (ENIT), Tunisia.
- July 1991** Engineer Diploma in Civil Engineering, ENIT.
- June 1985** Baccalauréat Maths-Sciences, Lycée Habib Maazoun, Sfax.

PROFESSIONAL EXPERIENCE

- 2012— Assistant Professor, Ecole Nationale d'Ingénieurs de Tunis, Tunisia.
- 2006—2012 Assistant Professor, Institut Prépartoire aux Etudes Scientifiques et Techniques (IPEST), Tunisia.
- 2005—2006 Assistant Professor, Faculté des Sciences de Bizerte (FSB), Tunisia.
- 2003—2005 Assitant, Istitut Prépartoire aux Etudes d'Ingénieurs El Manar (IPEIEM), Tunisia.
- 2000—2002 Assitant, Ecole Polytechnique Fédérale de Lausanne, Switzerland.

TEACHING EXPERIENCE

- 2013—: « Numerical solution of partial differential equations », ENIT.
- 2012—: « Numerical Analysis », ENIT.
- 2006—2012: « Scientific computing », IPEST.
- 2005—2006: « Linear Algebra », FSB.
- 2003—2005: « Analysis I », IPEIM.
- 2003—2004: « Théorie des Poutres », EPT.
- 2000—2002: « Linear Algebra & MATLAB », EPFL.
- 1999—2000: « DNA Modelling », EPFL.

LANGAGES

Arabic, French & English

DISSERTATIONS

1. Kirchhoff's Problem for helical solutions and their stability properties, PhD Thesis, EPFL, 2003 (Advisor: John H. Maddocks).
2. Etude de Stabilité des Structures à Barres, Mémoire de D.E.A., ENIT, 1992 (Advisors: M. Jaoua & R. El Fatmi).
3. Vérifications Automatiques des Constructions Métalliques Suivant le CM66, Projet de Fin d'Etudes, ENIT, 1991 (Advisors: M. Jaoua & M. Terasovich).

PUBLICATIONS

1. N. Chouaieb and J. H. Maddocks, Stability of Rods: Application to Helices, work in progress.
2. N. Chouaieb, B. Iannazzo, and M. Moakher, Riemannian metrics on the cone of positive-definite matrices related to some potential functions, work in progress.
3. N. Chouaieb, B. Iannazzo, and M. Moakher, Geometries on the cone of positive-definite matrices derived from the power potential and their relation to the power means. *Linear Algebra and its Applications*, 638, pp. 80—109, 2022.
4. N. Chouaieb, A. Goriely and J. H. Maddocks, (2006) Helices, *Proceedings of the National Academy of Sciences of the USA*, 103/25, pp. 9398—9403.
5. N. Chouaieb and J. H. Maddocks (2004), Kirchhoff's Problem of Helical Equilibria of Uniform Rods, *Journal of Elasticity*, 77, pp. 221—247.

CONFERENCE PROCEEDINGS

1. N. Chouaieb & H. Hassis, Sous structuration dynamique: prise en compte de l'impédance, de modes de corps rigides et de la troncature de la base, 5eme Colloque Maghrebin sur les Modèles Numériques de l'Ingénieur. Rabat, Morocco, 1995.
2. N. Chouaieb & R. Fatmi, Flambement des Structures de Poutres, avec R. El-Fatmi, 1er Congrès de Mécanique, Rabat, Maroc, 1993.

WORKSHOPS

- Jean Morlet Chair - Research School “Random quantum channels: entanglement and entropies”, 8 to 12 July 2024, CIRM (Centre International de Rencontres Mathématiques), Marseille, France.
- Multiscale Mathematical Modeling of Elastic Filaments, Conference in honor of John Maddocks' 60th birthday, 11 to 18 January 2018, EPFL, Lausanne, Switzerland.
- CIMPA Research School: Science des données pour l'ingénierie et la technologie, June 2019, Tunis, Tunisia.
- CIMPA Research School: Mathématiques pour la biologie, October 2016, Tunis, Tunisia.
- Workshop on Biopolymers: Thermodynamics, Kinetics and Mechanics of DNA, RNA and Proteins, ICTP, Juin 2005, Trieste, Italy.

TALKS AT INTERNATIONAL CONFERENCES

- Solution of the matrix equation for geodesics associated with the Riemannian metric on the space of positive-definite matrices based on the power potential, with B. Iannazzo and M. Moakher, Matrix Equations and Tensor Techniques IX (METTIX), Perugia, Italy, September 9 & 10, 2021.
- New power mean of positive-definite matrices derived from the power potential, with B. Iannazzo and M. Moakher, Minisymposium “Matrix Geometries with Applications”, SIAM

Conference on Applied Linear Algebra, May 19, 2021.

- Helices, with J. H. Maddocks and A. Goriely, « Workshop on Mathematical Methods and Models of Continuum Biomechanics, Mathematisches Forschungsinstitut Oberwolfach », Oberwolfach, Germany, February 2005.
- Sous structuration dynamique: prise en compte de l'impédance, de modes de corps rigides et de la troncature de la base, with H. Hassis, Communication at the “5eme Colloque Maghrebin sur les Modèles Numériques de l'Ingénieur”, Rabat, Morocco, June 1995.
- Flambement des Structures de Poutres, with R. El-Fatmi, Communication at the “1er Congrès de Mécanique”, Rabat, Morocco, June 1999.

VISITING POSITIONS

- 9 January – 6 February 2023: Visiting researcher, Swiss Federal Institute of Technology, Lausanne, Switzerland.
- 1 – 31 July 2022: Visiting researcher, Swiss Federal Institute of Technology, Lausanne, Switzerland.
- 1 March – 1 April 2019: Department of Mathematics, University of Perugia, Italy.