

CURRICULUM VTÆ

First name & Last name: Abdessatar Khelifi

Professional address: Department of mathematics, Faculty of Science Bizerte, Carthage University.

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MAIN RESEARCH INTERESTS:

Asymptotic analysis, Perturbation theory, Inverse problems, Spectral theory.

EDUCATION:

- **1998-2002:** PhD in Mathematics (very honorable).

University of south Paris, Ecole polytechnique Palaiseaux, France.

Location: Center for Applied Mathematics (CMAP), Ecole Polytechnique, France.

Supervisor: Habib AMMARI

Thesis Reporters:

- Oscar Bruno, University of California, USA
- Masahiro. Yamamoto, University of Tokyo, Japan

Composition of the jury:

- J-P. Puel, University of Versailles, France (President of the jury),
- Oscar Bruno, University of California, USA
- Masahiro. Yamamoto, University of Tokyo, Japan
- H. Ammari, Ecole Polytechnique, Paris, France
- D. Cioranescu, University of Paris VI, France
- K. Hamdache, Ecole Polytechnique, France
- V. Komornik, University of Strasbourg, France
- J-C. Nédélec, Ecole Polytechnique, France

- **1997-1998:** Master of Science in applied Mathematics: Numerical Analysis at the University Paris 6. France.

- **1992-1996:** Bachelor Degree in mathematics

Faculty of science of Tunis, University of Tunis El-Manar, Tunisia.

- **1992:** General certificate of Education. School ibn Al Jazzar, Kairouan.

WORK EXPERIENCE:

2013-Present: Associate professor, Department of mathematics, Faculty of Sciences Bizerte, Carthage University, Tunisia.

2012-2013: Assistant Professor, Department of mathematics, Faculty of Sciences Bizerte, Carthage University, Tunisia.

2007-2012: Assistant professor, Department of Mathematics, College of Science and Arts in Rass, Qassim University, Kingdom of Saudi Arabia.

2002-2007: Assistant Professor, Department of mathematics, Faculty of Sciences Bizerte, Carthage University, Tunisia.

2001-2002: Teaching assistant in the faculty of sciences of Creteil, university of Paris 12.
Courses taught: Analysis, Algebra, Functional analysis.

ADMINISTRATIVE POSITIONS:

2014-Present: Director of the Master's degree *in Mathematics*, Faculty of Science- Bizerte, Carthage University, Tunisia.

2013-Now: Member of the competent committee in the assessment of doctoral thesis, Faculty of Science of Bizerte, Carthage University, Tunisia.

2007-2012: Member of the Committee on the activity, College of Science and Arts in Rass, Qassim University, Kingdom of Saudi Arabia.

2010-2012: Member of the Committee on the quality and academic reliance, College of Science and Arts in Rass, Qassim University, Kingdom of Saudi Arabia.

GRANTS AND AWARDS:

- A grant of the Tunisian state to study in France (1997-1998).

- A grant of the French state to excellent Tunisian students (1998-2001).

- Thanks and appreciation (certificate) from the College of Science and Arts in Rass on efforts to contribute in the forum the fourth general assembly of Saudi Arabia physical sciences in Riyadh in the King Abdulaziz City for Science and technology - The National Center for mathematics, physics in the period from 11 to 12 November 2008.

- The 2017 High-level Scientific Stay (SSHN 2017) of the French Embassy in Tunisia.

COMPUTTING SKILLS:

Matlab, Freefem++, Maple, Mathematica, Scientific Workplace, LaTeX, Microsoft Office.

LANGUAGES: Arabic, French and English (fluent written and spoken).

SCIENTIFIC PUBLICATION:

- M. Gozzi and **A. Khelifi**, *On the behaviour of resonant frequencies in the presence of small anisotropic imperfections*, *Indagationes Mathematicae*, Vol. 28, No. 6, (2017) 1240-1257.
- Daveau Christian, **Khelifi Abdessatar** and Balloumi Iman, *Asymptotic Behaviors for Eigenvalues and Eigenfunctions Associated to Stokes Operator in the Presence of Small Boundary Perturbations*. *Math Phys Anal Geom* (2017) 20: 13. doi:10.1007/s11040-017-9243-3.

- **Khelifi Abdessatar**, Lassad El Asmi and Manel Bouraoui, Reconstruction of polygonal inclusions in a heat conductive body from dynamical boundary data. ESAIM: M2AN, 51 3 (2017) 949-964.
- **Khelifi, Abdessatar**; Boujemaa, Saoussen, *Small perturbation of a surface: full Maxwell's equations*. J. Math. Anal. Appl. 444, No. 2, 1721-1738 (2016).
- **Khelifi Abdessatar**; Zribi Habib, *Boundary voltage perturbations resulting from small surface changes of a conductivity inclusion*. Appl. Anal. 93, No. 1, 46-64 (2014).
- Daveau Christian; Douady, Diane Manuel; **Khelifi Abdessatar**; Sushchenko, Anton, *Numerical solution of an inverse initial boundary-value problem for the full time-dependent Maxwell's equations in the presence of imperfections of small volume*. Appl. Anal. 92, No. 5, 975-996 (2013).
- Daveau Christian; **Khelifi Abdessatar**, *Asymptotic behaviour of the energy for electromagnetic systems in the presence of small inhomogeneities*. Appl. Anal. 91, No. 5, 857-877 (2012).
- **A. Khelifi** and H. Zribi, *Asymptotic expansions for the voltage potentials with two- and three-dimensional thin interfaces*. Math. Methods Appl. Sci. 34, No. 18, (2011), 2274-2290.
- C. Daveau **A. Khelifi** and A. Shushenko, *Reconstruction of closely spaced small inhomogeneities via boundary measurements for the full time-dependent Maxwell's equations*, Appl. Math. Modelling 33, No. 3, (2009) 1719-1728.
- C. Daveau and **A. Khelifi**, *On the perturbation of the electromagnetic energy due to the presence of small inhomogeneities*. C. R. Acad. Sci. Paris, Ser. I 346 (2008) 287-292.
- **A. Khelifi**, *Determination of small amplitude perturbations for the electric permittivity from partial dynamic boundary measurements*. J. Math. Phys. 48 (2007), no. 12, 123501, 10 pp.
- Daveau, Christian, Douady, Diane Manuel and **Khelifi, Abdessatar**, *On a hyperbolic coefficient inverse problem via partial dynamic boundary measurements*. J. Appl. Math. , 14 p. (2010).
- **A. Khelifi**, *Asymptotic property and convergence estimation for the eigenlements of the Laplace operator*. Appl. Anal. 86 (2007), no. 10, 1249-1264.
- H. Ammari and **A. Khelifi**, *Electromagnetic scattering by small dielectric inhomogeneities*. J. Math. Pures Appl. (9) 82 (2003), no. 7, 749-842.

Main Working Papers:

- C. Daveau et A. Khelifi, *Reconstruction of a complex electromagnetic coefficient from partial measurements for the Maxwell's equations*.
- C. Daveau, A. Khelifi and S. Oueslati, *Small pertubations of an interface for Stokes problems \mathbb{R}^2* .
- Khelifi, *On a boundary layer method for solving full Maxwell equations in the presence of an inhomogeneity of small diameter*.
- A. Jbalia and A. Khelifi, *Determination of small linear perturbations in the diffusion coefficient from partial dynamic boundary measurements*.

Work in Progress:

- Khelifi, *On the identification of small anisotropic inhomogeneities from dynamic boundary measurements*.

- Khelifi and S. Boujemaa, *Maxwell interface problems: Existence and uniqueness of solutions for Maxwell Equations*.
- M. Gozzi and A. Khelifi, On a largest eigenvalue problem.

INVITED TALKS:

- A. Khelifi, *Asymptotic expansion of the potential in presences of thin interfaces*, Hammamet, Tunisia, May 9th, 2014.
- C. Daveau, A. Khelifi, *on an inverse problem of reconstructing an unknown coefficient in a second order hyperbolic equation from partial boundary measurements*. The proceedings of International Conference on Inverse Problems 2010, a special issue of Methods and Applications of Analysis (International Press, Boston).
- C. Daveau, A. Khelifi and A. Sushchenko, *Reconstruction of closely spaced small inhomogeneities via boundary measurements for the full Time dependent Maxwell's equations*, Aplimat, 2009, Bratislava.
- C. Daveau, A. Khelifi and Anton Sushchenko, *An inverse problem of identifying locations of small volume perturbations of the refractive index for the acoustic equation at fixed frequency*, CIRM09, Marseilles, France, 2009.
- C. Daveau, A. Khelifi, and Anton Sushchenko, *Identifying of the refractive index for the acoustic equation at fixed frequency*, Syst. Theory: Model. Anal. and Control, Fez, 2009.
- Khelifi : *On an inverse problem for a linear Schrödinger equation via Dirichlet-to-Neumann map method*, "SPS; 4th annual meeting", Riyadh, Saudi Arabia (November, 2008).
- C. Daveau, A. Khelifi, and A. Shushenko, *An inverse problem of identifying locations of small volume perturbations of the refractive index for the acoustic equation at fixed frequency*, The 10th Workshop on Optimization and Inverse Problems in Electromagnetism, (OIPE), Ilmneu, Allemagne, (September 2008).
- Khelifi, *Some properties for the eigenelements of the Laplace operator*, the 1st Symposium on Global Analysis and Probability, May 2008, Kingdom Saudi Arabia.
- Khelifi : *Effet de la perturbation du domaine sur le comportement asymptotique et estimations de convergence des elements propres de l'operateur de Laplace*. CANUM'06, Rennes 1, (2006), France.

OTHER ACTIVITIES AND INTERESTS:

- Football.
- Scientific activities.