CURRICULUM VITAE

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EDUCATION
Ph.D. University of Maryland, 1988.

PROFESSIONAL EXPERIENCE
Sept. 89 - Aug. 2002 : Chargé de recherche CNRS, Centre de Mathématiques Appliquées, Ecole Polytechnique, Palaiseau, France
Sept. 1995- Dec. 1996 : Visiting position at the Department of Mathematics, Rutgers University, USA
Since Sept. 2001 : Professor, Université Joseph Fourier, Grenoble.
Nov. 2016 : Visiting Professor, EPFL, Lausanne.
Dec. 2016 : Visiting Professor, Dept. of Mathematics, HKUST, Hong Kong.

RESEARCH INTERESTS
Homogenization and composite materials.
Shape optimization and inverse problems.
Mean curvature flow and crystal growth.

CURRENT RESEARCH PROJECTS
Pointwise bounds on the gradients of solutions to elliptic PDE’s in composite media.
Spectral properties of the Neumann-Poincaré operator and applications to metamaterials.
Asymptotic study of the diffractive properties of rough metallic surfaces.
Elastic instabilities in thin crystalline films.
CURRENT COLLABORATIONS:
Hoai-Minh Nguyen (EPFL), M. Vogelius (Rutgers), F. Santosa (Minneapolis), Hai Zhang (Hong Kong), Haigang Li (Beijing Normal University), H. Ammari (ETH Zurich), C. Dapogny, and F. Triki (LJK Grenoble).

SERVICE TO THE COMMUNITY:
Member of the Commission Scientifique Sectorielle 5 of the Institut de Recherche et Développement (since 2015).
Coordinator for Mathematics of the Ecos Nord program (since 2012).
Chairman of the Laboratoire Jean Kuntzmann, 2011-2016, (105 faculty members, 90 PhD students).
Director of the Master program in Applied Mathematics of Université Joseph Fourier, 2003-2010.
Member of the program committee of ‘Dynamique des Systèmes Complexes’, a local interdisciplinary research group (http://consoude.ujf-grenoble.fr/dysco2004/index.htm).
Member of the hiring committees of the universities of Clermont-Ferrand, Nice, Rennes, Toulouse, Saint Etienne.

Program committees:
Member of the organizing committee and of SMAI 2007, (the bi-annual meeting of the French Applied and Industrial Maths Society).
Member of the scientific committee, Congrès National d’Analyse Numérique 2008 (Canum).
Member of the scientific committee of WIPA 2010 Workshop on Inverse Problems and Application, Valparaíso, Chile, Jan. 18-22, 2010 (and CIMPA summer School in Santiago).
Member of the organizing committee Applied Analysis for the Material Sciences, CIRM Luminy, 2013.
Member of the organizing committee PICOF 2016, Autrans, 2016.
France–Mexico meeting on Data Analysis, UNAM, Mexico City, Nov. 3th-4th 2016. Member of the organizing committee.
Organizing committee of the workshop on Emerging topics in optics, IMA special year on Mathematics and Optics, April 24th-28th 2017, Minnesota.
France-Mexico Summer School on Data Analysis, UNAM, Mexico City, Dec. 13th-15th 2017. Member of the organizing committee.
Member of the scientific and organizing committees, AIP 2019.

PROJECTS AND CONTRACTS:
Société Nationale des Poudres et Explosifs (SNPE, contrat # 2092, 1993-1994)
Coordinator of the cooperation project DGRST (Tunisie)-CNRS (projet 98/R1501), (thèse de F. Khayat, 1998–2001).
Coordinator (with M. Vogelius) of the CNRS/NSF project “Défauts, interfaces et couches limites dans les milieux composites” (projet 10669, 2001–2003).
Coordinator of the project ‘Elasticité et Nanostructures’, sponsored by the Région Rhône-Alpes.
Coordinator for LJK of Echoscan, a project sponsored by ANR (Agence Nationale de la Recherche, 2006-2009).
Member of the ANR project Optiform (2012-2014).
Member of the ANR project Multi-ondes (2017-2019).
PI project HOMONIM, AGIR-University Grenoble-Alpes ‘Homogenization and Negative Index Materials’ (2015-16).

AWARDS:

INVITED COURSES:
Complejidad en diseño óptimo: microestructuras y microgeometrías, Universidad de Castilla-La Mancha, Ciudad Real, april 2008.
Homogénéisation des milieux composites en phases diluées et applications, Calais, Sept. 2009.
Problèmes inverses hybrides, Tunis, March 2012.
Summer program on PDE’s and Applied Mathematics, VIASM. Hanoi, July 14th-Aug. 7th 2014.
Integral equations for the modeling of plasmonic resonance of nanoparticles, Radon Workshop: Quantitative Tomographic Imaging - Radon meets Bell and Maxwell, RICAM, Linz, July 10th-14th, 2017.
Spectral properties of the Neumann-Poincaré operator, Beijing Normal University, Beijing, Aug. 8th-23rd, 2017
Spectral properties of the Neumann-Poincaré operator, Inha University, Seoul, Jan 29th-Feb 2nd, 2018.

PUBLICATIONS IN REFEREED JOURNALS
1. E. Bonnetier. Plane stress elasto-plastic constitutive equations obtained by homogenizing one-dimensional structures. RAIRO M2an, Vol. 29, 1, 23-


SUBMITTED ARTICLES


PUBLICATIONS IN PROCEEDINGS


4. E. Bonnetier, R.S. Falk et M. Grinfeld. A one-dimensional model to account for stress driven rearrangement in the equilibrium shape of a deformable crystal. Proceedings of the Conference on Inverse problems, Control and Shape Optimization (PICO'98), Carthage, Tunisia, 98.


7. E. Bonnetier et F. Ben Hassen, Asymptotics of the potential in a per-


PATENT


TECHNICAL REPORTS


INVITED TALKS and SEMINARS

Ecole Nationale des Ingenieurs de Tunis, April 1991.
Université J. Fourier, Grenoble, April 1993.
Universidad de Chile, Santiago, June 1995.
Rutgers University, Feb. 1996.
University of Utah, Salt Lake City, May 1996.
University of Maryland, Baltimore County, Oct. 1996.
University of Maryland College Park, Nov. 1996.
Picof’98 Carthage, Tunisia, April 1998.
University of Texas, Austin, Oct. 98.
University of Florida, Gainesville, Nov. 98.
Université d’Orléans, Nov. 98.
Université de Lyon 1, Feb. 99.
Universidad de Concepcion, Chile, March 99.
Universidad de Chile, Santiago, March 99.
ICIAM, Edimbourg, July 1999.
University of Florida, Gainesville, Nov. 99.
ETH Zürich, Dec. 99.
Danish Technical University, Nov. 2000.
Université de Saint-Etienne, Nov. 2001.
Université Paris 6, Jan. 2002.
Picof 02, Carthage, Tunisie, April 2002.
Université Rennes 1, April 2004.
Université de St. Etienne, Feb. 2005.
Spring Southeastern Meeting of the AMS, Miami, April 2006.
Journées EDP de Metz, Aspects géométriques des EDP et Applications, April 2006.
Université du Chili, Santiago, Jan. 2007.
Cinquièmes Journées Singulières, CIRM, Luminy, April 2007.
Université de Clermont Ferrand, March 2007.
Journées CPER Nancy-Metz, Nancy, Dec. 2007
4th International Conference on Inverse Problems, Control and Shape Optimization, PICOF’08. Marrakech, Maroc, April 2008.
University of Florence, Nov. 2008.
Colloque Modélisation mathématique en mécanique, Congrès Français de Mécanique, Marseille, Aug. 2009.
Workshop on Control and Inverse Problems, IISc Bangalore, Dec. 2009.
MSRI Berkeley, Inverse problems and applications, Nov. 08-12, 2010.
Conference on Mathematics of Medical Imaging, the Fields Institute, Toronto, June 2011.
Multi-Scale and High-Contrast PDE: From Modelling, to Mathematical Analysis, to Inversion, Oxford, July 2011.
International Conference on Inverse Problems and Applications in Honor of Gunther Uhlmann’s 60th Birthday, Hangzhou, Sept. 2012.
Workshop Coupled Physics Inverse Problems, Jan 3-5 2013, Santiago.
7èmes journées scientifiques de l’Université de Toulon, April 9-10 avril 2013.
Applied Inverse Problems 2013, Daejeon, South Korea, July 1st-5th.
Workshop on Multiple Modelling and Methods, Oct. 8-9 2013, St. Etienne.
Forum Math-for-Industry 2013, Nov. 4-8 2013, Fukuoka.
Seminar, University of Orsay, Dec. 12, 2013.
Picof 2014, May 6-9th, 2014
Workshop Shape Optimization, Oct. 13-17th 2014, RICAM Linz.
Workshop GOMS, Nov. 27-28th 2014, Marseille.
Séminaire EPFL, March 27th 2015, Lausanne.
Minisymposium on Mathematics and Optics. ICIAM 2015, Beijing.
Minisymposium Metamaterials and Their Recent Applications, SIAM conf. on mathematical aspects of material science, May 8-12th 2016, Philadelphia
IAS workshop on Inverse Problems, Imaging and PDE’s, Dec. 5-9th, Hong Kong 2016.
Math. Dept. Seminar, Hong Kong Baptist University, Dec. 20th. 2016, Hong Kong.
Applied math seminar, Hong Kong University of Science and Technology, Dec. 23rd 2016, Hong Kong.
Warren lecture, Dept. of Civil Engineering, U. of Minnesota, Jan. 20th 2017, Minneapolis.
IMA seminar, U. of Minnesota, Jan. 21st 2017, Minneapolis.
IMA seminar, U. of Minnesota, Jan. 21st 2017, Minneapolis.
Seminar ENSTA, June 30th 2017, Palaiseau.
Seminar, Dept. of Physics, Dec. 16th 2017, UAEM Cuernavaca.
International Workshop on The Neumann-Poincaré Operator, Plasmonics, and Field Concentrations, Feb. 8th-10th 2018, Jeju, South Korea.
Workshop on Inverse Probems, Imaging and PDE’s, Institute for Advanced
Study HKUST, March 12-16, 2018, Hong Kong.
Workshop on PDE’s: Modelling & Theory, May 9-10 2018, Monastir.
Mini-symposium on Modern Aspects of Bound States and Resonance, 2018
SIAM Annual Meeting, July 9th-13th, Portland.

PHD STUDENTS and POSTDOCS

- Fehmi Ben Hassen (PhD 1999–2004, co–direction with A. Ben Abda, ENIT Tunis) then postdoc at the University of Göttingen, and now assistant professor at the University of Tunis.
- Frédéric Huguet, (PhD 2005, co–direction with F. Devernay) currently research engineer CEA Grenoble.
- Lukas Jakabcin, (PhD student 2009-2013, co-direction with S. Labbé) currently postdoc at Ecole Polytechnique.
- Xi Que (PhD student, 2014-2017, co-direction with F. Triki).