

Gilles A. Francfort

Laboratoire Analyse Géométrie et Applications, Université Paris-Nord
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Degrees

- 06/89 Habilitation à diriger des recherches,
Université Paris 6, Paris.
- 06/82 Ph.D. in Mechanical Engineering,
Stanford University, Stanford.
- 06/78 Diplôme d'Ingénieur Civil des Ponts et Chaussées,
Ecole Nationale des Ponts et Chaussées, Paris.

Professional Experience

- 09/14 - now Visiting Professor, Courant Institute,
New York University, New York (one academic semester/year).
- 10/11 - 09/16 Senior Member, Institut Universitaire de France, Paris.
- 09/94 - now Professor, Department of Mathematics,
Université Paris-Nord, Villetaneuse.
- 09/93 - 05/94 Visiting Associate Professor, Department of Mathematics,
Carnegie Mellon University, Pittsburgh.
- 09/90 - 06/91 Senior Research Scientist, Courant Institute,
New York University, New York.
- 10/83 - 10/92 Research Scientist, Mathematics Division,
Laboratoire Central des Ponts et Chaussées, Paris.

Non-academic cursus

- 10/82 - 10/83 Military service, France.
- 10/92 - 08/93 Personal leave.

Honors

- 04/02 Prix Thématique Paul Doistau-Emile Blutet,
French Academy of Sciences (jointly with J.-J. Marigo).

Plenary Conferences

- 05/98 Congrès National d'Analyse Numérique 1998, Arles, France.
- 03/10 GAMM 2010, 81st Annual Meeting, Karlsruhe, Germany.
- 07/11 ICIAM 2011, 7th International Congress on Industrial and
Applied Mathematics, Vancouver, Canada.

Supervision

- 12 /98 Blaise Bourdin (Paris-Nord). Professor, L.S.U., Baton Rouge.
- 10/05 Jean-François Babadjian (Paris-Nord). Professeur, Université
Paris-Sud, Orsay.
- 02/05-02/06 Alessandro Ferriero (Paris-Nord, Ecole Polytechnique) Post-Doc.
Profesor Contratado Doctor , Universidad Autónoma de Madrid.

Editorial Board

Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire
Applied Mathematics Research Express (defunct)
Mathematics and Mechanics of Complex Systems

Contractual and sponsored activity

- 16-19 co-Principal Investigator: NSF grant DMS-1615839
“*Fracture in Soft Organic Solids – The Variational View*”.
- 07-10 Member: ANR : “*Mouvements d’Interfaces, Calcul et Applications*”.
- 04-09 Member: Multimath European Network: “*Multi-scale modelling and characterisation for phase transformations in advanced materials*” (MRTN-CT-2004-505226).
- 98-04 Member: TMR European Network: “*Phase Transitions in Crystalline Solids*”.

Various Services

Referee for: Arch. Rat. Mech. Anal., *J. Mech. Phys. Solids*, M2AN, M2AS, Comptes Rendus Acad. Sc. Paris, *J. Convex Anal.*, S.I.A.M. J. Appl. Math., *S.I.A.M. J. Math. Anal.*, J. Elasticity, *Port. Mat.*, Interfaces Free Boundaries, *Eur. J. Mech.*, Ann. Fac. Sc. Toulouse, *Appl. Math. Optim.*, Asymp. Anal., *Proc. Royal Soc. London*, Proc. Royal Soc. Edinburgh, *Nonlinear Anal.*, J. Nonlinear Sc., *Com. Part. Dif. Eq.*, Eur. J. Appl. Math., *ESAIM: COCV*, Zeit. Ang. Math. Mech., *Annali di Mat*, Proc. A.M.S., *Cont. Mech and Therm.*, J. Diff. Eqns., *Nonlinearity*, J. Funct. Anal., *Comm. Pure Applied Maths.*, J. Maths Pures Appliquées, *Optimization*, Cont. Discrete Dyn. Systems, M3AS, Annali Scuola Norm. Sup. Pisa, *Comp. Appl. Maths.*, J. Dyn. Differential Eqns., *S.I.A.M. Mult. Mod. Sim.*, IMA J. Applied Maths, *Calc. Var.*, Eng. Fracture Mech. *J. Eur. Math. Soc.* + about 10 books.

Expertise for: European Research Council, International Centre for Mathematical Sciences Research-in-groups, Ecos Sud, Mathematics Responsive Mode, Engineering and Physical Sciences Research Council, IndAM, INRIA Research Project Teams, e-GAP (The Royal Society).

Conferences organized

- 06/92 Member of Organization Committee: *First European Congress of Mathematics*, Paris, July 06 -10, 1992.
- 09/04 Co-organizer with A. Mielke (Stuttgart) of *Workshop on Rate Independent Processes*, Paris, Aug. 30 – Sept. 01, 2004.
- 07/06 Co-organizer with G. Dal Maso (Trieste), V. Ferone (Napoli), F. Murat (Paris) of Special Session: *P.D.E.'s and applications*, in *Joint Meeting Mathematics and Its Applications*, Torino, July 03 – 07, 2006.
- 02/07 Co-organizer with G. Dal Maso (Trieste), A. Mielke (Stuttgart), T. Rubicek (Prague) of Oberwolfach Workshop: *Analysis and Numerics for Rate Independent Processes*, Oberwolfach, Feb. 25 – Mar. 03, 2007.
- 07/07 Co-organizer with K. Hamdache (Palaiseau), L. Mascarenhas (Lisboa), F. Murat (Paris) of Conference: *Des équations aux dérivées partielles au calcul scientifique, Congrès en l'honneur de Luc Tartar*, Paris, July 02 – 06, 2007.
- 09/07 Member Scientific Committee CEDYA 2007
X Congreso de Matemática Aplicada, Sevilla, Sept. 24–28, 2007.
- 05/08 Co-organizer with G. Dal Maso (Trieste), A. Garroni (Rome), C. Larsen (Worcester) of four-part mini-symposium: *Damage and Fracture Evolution*, SIAM conference on *Mathematical Aspects of Materials Science*, Philadelphia, May 11 – 14, 2008.
- 09/08 Member Scientific Committee IUTAM Conference on *Variational Concepts with Applications to the Mechanics of Materials*, Bochum, Sept. 22–26 , 2008.
- 05/10 Member Organizing Committee SIAM Conference on *Mathematical Aspects of Materials Science*, Philadelphia, May 23 – 26 , 2010.
- 07/14 Co-organizer with M. Kružík (Prague), A. Gloria (Brussels), of Workshop: *Relaxation, Homogenization and Dimensional Reduction in Hyperelasticity*, Paris, March 25 – 27, 2014.
- 08/15 Co-organizer with S. Luckhaus (Leipzig) of Oberwolfach Mini-Workshop: *Scales in Plasticity*, Oberwolfach, Nov. 8 – 14, 2015.
- 01/16 Co-organizer with C. Miehe (Stuttgart) of 15th GAMM-Seminar on Microstructures, Paris, Jan 22 – 23, 2016.
- 05/16 Co-organizer with B. Bourdin (Baton Rouge), C. Larsen (Worcester), C. Maurini (Paris) of BIRS Workshop “Variational Models of Fracture” , Banff, May 9 –13, 2016.
- 05/18 One of 9 co-organizers of Workshop “Vers une vision variationnelle de la mécanique”, Porquerolles, May 31 –June 2, 2018.

Invited Visits outside France

New York University New York	many times since 06/84 (stays ranging from one week to 6 months).
University of Michigan, Ann Arbor	08/84 (1 week); 06/85 (2 weeks); 04/86 (1 week); 12/88 (1 week).
California Institute of Technology, Pasadena	04/86 (1 week); 06/97(1 week); 06/98(2 months); 08/02(6 weeks).
Carnegie Mellon University, Pittsburgh	10/91(1 week); 04/91(1week); 12/94 (1 week); 03/96(1 month); 03/97 (2 weeks); 11/98 (1 week); 01/00 (1 week); 09/00 (1 week) ; 10/01 (3 weeks); 11/02(3 weeks), 11/03(3 weeks), 10/04 (2 weeks), 11/13(1 week), 11/14(1 week).
Mathematical Science Research Institute, Berkeley	01/91 (2 weeks).
University of Minnesota, Minneapolis	04/91 (1 week) ; 03/94 (1week); 06/96 (1 week).
University of Utah, Salt Lake City	04/96 (1 month); 01/05(1 week).
University of California, Los Angeles	07/96 (1 month).
Rice University, Houston	10/95 (1 week).
Università di Napoli, Napoli	12/84 (1 week).
Danmarks Tekniske Højskole, Lyngby	02/86 (1 week).
Universidade de Lisboa, Lisboa	06/86 (1 week).
International Center for Theoretical Physics, Trieste	10/85 (2 weeks); 01/90 (3 weeks).
Heriot-Watt University, Edinburgh	06/86 (1 week); 12/17 (2 days).
Universidad Complutense, Madrid	02/95 (1 week).
Universidad de Chile, Santiago	06/96 (1 month).
Max-Planck Institut fur Mathematik, Leipzig	03/98 (1 week); 05/98 (2 weeks).
Worcester Polytechnic Institute, Worcester	01/00(1 week), 08/01(1 week) ; 11/02(1 week); 11/14(3 days)
Isaac Newton Institute Cambridge	10/99(8 weeks)
Universidad de Sevilla, Sevilla	04/00(1 week)
Università di Roma 1 Roma	12/01(2 weeks); 11/07(1 week)

Università di Roma 2 Roma	12/02(1 week); 02/05(1 week)
S.I.S.S.A. Trieste	01/03(3 weeks); 04/13(2 weeks); 05/15 (1 week)
University of Warwick Coventry	06/03(1 week)
Rutgers University New Brunswick	11/04(1 week)
Scuola Normale Superiore Pisa	10/06(1 month)
Oxford University Oxford	12/06(1 week)
Max Planck Institut Leipzig	04/08(3 days)
University of Bristol Bristol	06/08(1 week)
Università di Brescia Brescia	07/10(3 days)
McGill University Montreal	01/11(3 days)
Cornell University Ithaca	05/11(3 days)
Università di Pavia Pavia	12/11(3 days); 06/12(3 days); 10/16(1 week)
Technische Universität München Munich	07/12(3 days)
Technische Universität Dortmund Dortmund	03/13(3 days)
University North Texas Denton	10/13(4 days)
Stanford University Stanford	02/02 (2 days); 12/15(3 days)
University of Illinois at Urbana-Champaign Champaign	09/15 (3 days)
Purdue University West Lafayette	04/16 (3 days)
Schrödinger Institute Vienna	06/16 (2 weeks)
University of Texas Austin	04/17 (3 days)
Louisiana State University Baton Rouge	04/19 (4 days)
Technische Universität Braunschweig Braunschweig	06/19 (4 days)

Seminars

- 1983 ONERA, Université Nancy 1, Ecole Mines Nancy , Ecole Polytechnique.
- 1984 Ecole Normale Supérieure , Université Paris 6 , Academia Navale de Napoli, Ecole Polytechnique.
- 1985 Université Paris 6, Université de Metz, University of Michigan.
- 1986 Université Paris 6, Université de Chambéry, Danmarks Tekniske Højskole, University of Michigan, Universidade de Lisboa.
- 1988 Université du Languedoc, New Jersey Institute of Technology, University of Michigan, Université Paris 6.
- 1989 Carnegie Mellon University.
- 1990 Université de Toulon, Princeton University, Université Paris 6, Courant Institute.
- 1991 University of Delaware, University of Minnesota(2), Carnegie Mellon University, Courant Institute.
- 1992 Collège de France, Ecole Polytechnique, Université Paris 6, Université Paris-Sud.
- 1993 Carnegie Mellon University, Ecole Polytechnique.
- 1994 Collège de France, Université Paris-Sud, Worcester Polytechnic Institute, University of Minnesota, Carnegie Mellon University, Ecole Normale Supérieure.
- 1995 Universidad Complutense de Madrid, Rice University (colloquium).
- 1996 Université Grenoble(2), Université Paris 6, Carnegie Mellon University, University of Utah, Universidad de Chile.
- 1997 Carnegie Mellon University, Université Paris 6, Oxford University.
- 1998 Université Orléans, Université Paris 6(2) , Université Nice, Max Planck Institut leipzig, Carnegie Mellon University:.
- 1999 Ecole Polytechnique (colloquium).
- 2000 Worcester Polytechnic Institute, Université Paris 6, Universidad de Sevilla, SISSA.
- 2001 Worcester Polytechnic Institute, Université Versailles, Università di Roma 1, Carnegie Mellon University, Université Paris 6.
- 2002 Université Paris 6, Université de Rennes, Ecole Nationale des Ponts et Chaussées, Stanford University, Carnegie Mellon University, Worcester Polytechnic Institute.
- 2003 Courant Institute, Louisiana State University, Carnegie Mellon University, University of Warwick.
- 2004 Courant Institute, Carnegie Mellon University, Université de Grenoble, Rutgers, Technische Universität Kaiserslautern.
- 2005 Ecole Polytechnique, Université Paris 6, University of Utah, University of Maryland.
- 2006 Oxford University, Ecole Polytechnique.
- 2007 Yeshiva University, Temple University, Worcester Polytechnic Institute, New York University, Brown University, University of Pennsylvania.
- 2008 Université Rennes (colloquium), INRIA, Max Planck Institut Leipzig, University of Bristol.
- 2009 Collège de France, Courant Institute, Fédération Francilienne de Mécanique.

- 2011 McGill University, CRS-ISM Colloquium Université de Montréal, GDR Chant, Ecole Polytechnique(2), Cornell University, Courant Institute, Institut des Hautes Etudes Scientifiques (Séminaire Laurent Schwartz).
- 2012 Université Paris 6, Université de Grenoble, Courant Institute(2), Technische Universität München, Temple University.
- 2013 Technische Universität Dortmund, University of North Texas, Carnegie Mellon University.
- 2014 Courant Institute (colloquium), University of Pittsburgh (colloquium), Worcester Polytechnic Institute.
- 2015 Université Paris 6, Université Libre de Bruxelles, Stanford University (colloquium).
- 2016 Purdue University (colloquium+seminar), University of Connecticut, Università di Pavia.
- 2017 University of Texas at Austin, Heriot-Watt University.
- 2018 Courant Institute.
- 2019 Louisiana State University (student colloquium); Technische Universität Braunschweig, Université Paris 6 (2 seminars).

Communications, lectures during special schools

** : *course*

- 09/83 6ème Congrès français de mécanique, Lyon, France.
- 07/84 International Conference on Numerical Methods for Transient and Coupled Problems, Venezia, Italy.
- 01/85 Symposium on Energy Release Rates and Path Independent Integrals in Defect and Fracture Mechanics, Bad Honnef, Germany.
- 10/85** Workshop on Semi-group Theory, International Center for Theoretical Physics, Trieste, Italy.
- 07/86 Symposium on Non-Classical Continuum Mechanics: Abstract Techniques and Applications, Durham, UK.
- 09/86 IUTAM Symposium on Thermomechanical Coupling in Solids, Paris, France.
- 12/88 SIAM Conference on Random Media, Leesburg, USA.
- 01/90 Workshop on Composite Media and Homogenization Theory, Trieste, Italy.
- 03/90 Mécamat, Evian, France.
- 06/90 Mathematical Problems in Non Linear Elasticity, Oberwolfach, Germany.
- 12/90 Problèmes non linéaires appliqués, Ecole CEA-EDF-INRIA, Clamart, France.
- 01/91 P.D.E. Conference on Homogenization, Berkeley, USA.
- 06/91 First European Conference on Elliptic and Parabolic Problems, Pont-à-Mousson, France.
- 06/92 Topology Design of Structures, Sesimbra, Portugal.
- 06/93 CIRM meeting on Calculus of Variations, Homogenization and Continuum Mechanics, Luminy, France.
- 02/94 North American Conference on Smart Structures and Materials, Orlando, USA.
- 04/94 SIAM Conference on Mathematics of Materials, Pittsburgh, USA.
- 02/95 Eurhomogenization Conference, Madrid, Spain.
- 03/95** Workshop on Shape Optimization, Saint Etienne, France.
- 06/95 Calculus of Variations and Nonlinear Elasticity, Cortona, Italy.
- 06/95 Conference on Dynamics of Microstructures, Hanover, Germany.
- 07/95 Minisymposium on Shape Optimization, ICIAM 95, Hamburg, Germany.
- 07/95** Conference on Optimal Design, Banach Center, Warsaw, Poland.
- 08/95 Conference on Structural Optimization, Salt Lake City, USA.
- 06/96 Workshop on Interface and Thin Films, IMA, Minneapolis, USA.
- 03/97 IUTAM Symposium on Composites/Active Materials, Cairo, Egypt.
- 05/97 Second SIAM Conference on the Mathematical Aspects of Materials Science, Philadelphia, USA.
- 06/97 Workshop: Mathematical Continuum Mechanics, Oberwolfach, Germany.
- 07/97** School on Shape Optimization, CEMRACS, Orsay, France.

09/97** Summer School on the Mathematics of Materials, CIM, Coimbra, Portugal.

09/97 Multiscale II, Leipzig, Germany.

04/99 GAMM 99, Metz, France.

06/99 CIRM meeting on Shape Optimization, Luminy, France.

10-12/99 Workshop on Mathematical developments in solid mechanics and materials science, Isaac Newton Institute, Cambridge, UK.

07/00** Euroconference on New Mathematical Methods in Continuum Mechanics, Anogia, Greece.

10/00 Symposium on Continuous Damage and Fracture, Cachan, France.

02/01 Workshop on Variational Methods beyond Elasticity, Leipzig, Germany.

06/01 First CSMA-GIMC Workshop on Modern Issues in Modelling and Computation of Damage and Failure, Cefalu, Italy.

07/01** School on Multi-Scale Problems, CEMRACS, Orsay, France.

12/01** School on Multiple Scales, Rome, Italy.

01/03** Course on Brittle Fracture, SISSA, Trieste, Italy.

07/03 CIRM meeting on Shape Optimization, Luminy, France.

08/03 Recent Developments in Modelling Rupture, Foz do Iguacu, Brazil.

09/03 Workshop: P.D.E.'s and Materials, Oberwolfach, Germany.

10/03 Workshop on Homogenization, Orléans, France.

01/04 Third GAMM on Microstructures, Stuttgart, Germany.

06/04 Midnight Sun Homogenization Conference, Narvik, Norway.

08/04 ICTAM04, Warsaw, Poland.

09/04 Variational Methods in Materials Science, Trieste, Italy.

09/04 Homogenization and Shape Optimization, Lisbon, Portugal.

12/04 Workshop: Thermodynamische Materialtheorien, Oberwolfach, Germany.

05/05 Mathematical Modeling in Continuum Mechanics, Alghero, Italy.

05/05 Equations aux dérivées partielles non-linéaires, Tipaza, Algeria.

09/05 Workshop on thin structures, Napoli, Italy.

10/05 Society for Natural Philosophy Meeting, Bari, Italy.

10/05 Workshop on the Calculus of Variations, Pittsburgh, USA.

10/05 AMS Sectional Meeting, Lincoln, USA.

11/05 Miniworkshop: Analysis and Computation of Microstructures in Finite Plasticity, Oberwolfach, Germany.

02/06 Modelling and analysis of phase transitions, Pisa, Italy.

05/06 VIII Congresso SIMAI, Ragusa, Italy.

07/06 SIAM Conference on Analysis of Partial Differential Equations, Boston, USA.

10/06 Workshop on Variational methods in Material Science, Pisa, Italy.

01/07 AMS Annual Meeting, New Orleans, USA.

06/07 Thermomechanical Modeling of Solids, Palaiseau, France.

10/07 SES 2007, College Station, USA.

- 11/07 Workshop on Rate-Independence, Homogenization and Multiscaling, Pisa, Italy.
- 02/08** Fracture and Damage : Formation and propagation of singularities in continuum mechanics, Winter School, Institut Henri Poincaré, Paris, France.
- 03/08** Singularities in Mechanics: formation, propagation and microscopic description, Centre Emile Borel, Paris, France.
- 05/08 SIAM Conference on the Mathematical Aspects of Materials Science Philadelphia, USA.
- 06/08 Workshop on Geometric Analysis, Elasticity, and PDE on the 60th Birthday of John Ball, Maxwell Institute and Heriot-Watt University, Edinburgh, UK.
- 09/08 IUTAM Symposium on Progress in the Theory and Numerics of Configurational Mechanics, Erlangen, Germany.
- 06/09** LMS–EPSRC Short Course on the Mathematics of Materials, Oxmos, Oxford University, Oxford, UK.
- 09/09 Homogenization and Optimal Design, Sevilla, Spain.
- 12/09 SIAM Conference on Analysis of PDE's, Miami, USA.
- 01/10 New Developments in Elasticity, the Legacy of Robert Hooke, Oxford, UK.
- 02/10 Motions of Interfaces and Non Linear P.D.E.'s, Tours, France.
- 05/10 SIAM Conference on the Mathematical Aspects of Materials Science Philadelphia, USA.
- 07/10** Variational Models and Methods in Solid and Fluid Mechanics, CISM, Udine, Italy.
- 08/10** Ecole Thématique 2010, GDR Chant: Enjeux de Modélisation et Analyse Liés aux Problèmes de Surfaces Rugueuses et de Défauts, Wolfgang Pauli Institute, Wien, Österreich.
- 08/10 Rate-independent systems: Modeling, Analysis, and Computations, Banff International Research Station Workshop, Banff, Canada.
- 09/10 Stability and Nonlinear Solid Mechanics, Institut Henri Poincaré, Paris, France.
- 07/11** School “Mechanics of Fractures and Second Gradient Theory”, M&Mocs, La Cisterna, Italy.
- 12/11 Workshop: Variational Methods for Evolution, Oberwolfach, Germany.
- 03/12 Workshop: Mechanics of Materials, Oberwolfach, Germany.
- 06/12 Variational Problems with Multiple Scales, Otranto, Italy.
- 07/12 Exotic Structures and Homogenization, Saint-Petersburg, Russia.
- 09/12 Evolution Problems in Damage, Plasticity and Fracture, Udine, Italy.
- 02/13 12th GAMM Seminar on Microstructures, Berlin, Germany.
- 04/13** Evolution Problems for Fracture Mechanics, SISSA, Trieste, Italy.
- 05/13 PACAM XIII, Houston, USA.
- 06/13 SIAM Conference on the Mathematical Aspects of Materials Science Philadelphia, USA.
- 06/13 15ème Rencontres Mathématiques de Rouen, Rouen, France.

- 09/13 International Conference on Nonlinear and Multiscale Partial Differential Equations: Theory, Numerics and Applications, Shanghai, China.
- 09/13 Evolution Problems for Material Defects: Dislocations, Plasticity, and Fracture, Trieste, Italy.
- 11/13** Multi-scale and Multi-field Representations of Condensed Matter Behavior, Pisa, Italy.
- 12/13 Workshop: Material Theory, Oberwolfach, Germany.
- 06/14 International Conference on Length Scale in Solid Mechanics: Mathematical and Physical Aspects, Paris, France.
- 09/14** Analyse Variationnelle et Microstructuration, 3^{ème} école d'été de mécanique, Quiberon, France.
- 12/14 Workshop: Variational Methods for Evolution, Oberwolfach, Germany.
- 01/15 14th GAMM Seminar on Microstructures, Regensburg, Germany.
- 05/15** Variational Methods for Plasticity & Dislocations, SISSA, Trieste, Italy.
- 05/15 PACAM XV, Champaign, USA.
- 12/15 Workshop Calculus of Variations and its Applications on the 65th birthday of Luisa Mascarenhas, Caparica, Portugal.
- 05/16 Workshop New Challenges in the Calculus of Variations in honor of the 60th birthday of Irene Fonseca, Montreal, Canada.
- 06/16 Workshop Advances in the Mathematical Analysis of Material Defects in Elastic Solids, SISSA, Trieste, Italy.
- 06/16 Workshop Entropy methods, dissipative systems, and applications, Schrödinger Institute, Vienna, Austria.
- 01/17 16th GAMM Seminar on Microstructures, Dortmund, Germany.
- 07/17 Workshop on Multiscale Problems and Relaxation in Nonlinear Elasticity, Dresden, Germany.
- 07/17 Workshop: Material Theories, Oberwolfach, Germany.
- 08/17** Free discontinuity problems and applications in fracture, mechanics Research Summer School, Ningbo, China.
- 02/18 Workshop: Variational Methods for Inelastic Solids, Oberwolfach, Germany.
- 05/18 Topics in the Calculus of Variations: Recent Advances and New Trends, Banff International Research Station Workshop, Banff, Canada (*did not give a talk*).
- 06/18 Celebrating Approximate 60s, Shanghai, China.
- 06/18 Free Boundary, Free Discontinuity Problems and Applications, Ningbo, China.
- 08/18 New Trends in the Variational Modeling of Failure Phenomena, Schrödinger Institute Workshop, Vienna, Austria.
- 11/18 Rencontres Franco-Tchèques de mathématiques, Lyon, France.
- 01/19 Joint Mathematics Meeting, AMS Special Session on Multiscale Problems in the Calculus of Variations, Baltimore, USA.
- 03/19 Phase-Field Models of Fracture, Banff International Research Station Workshop, Banff, Canada (*did not give a talk*).

List of Publications

1. Homogénéisation et oscillations rapides en thermoélasticité linéaire, C.R.A.S. Paris(1), 295, 1982, 367–370.
2. Conservation laws and material momentum in thermoelasticity, *with A.G. Herrmann*, J. Appl. Mech., 104, 1982, 710-714.
3. Homogénéisation de milieux viscoélastiques linéaires de Kelvin-Voigt, *with D. Leguillon, P. Suquet*, C.R.A.S. Paris(1), 296, 1983, 287-290.
4. Thermodynamique et lois de comportement thermomécanique homogénéisées, *with Q.S. Nguyen, P. Suquet*, C.R.A.S. Paris(2), 296, 1983, 1007-1010.
5. Homogenization and linear thermoelasticity, S.I.A.M. J. Math. Anal., 14(4), 1983, 696-708.
6. Homogenization and fast oscillations in linear thermoelasticity, **in:** Numerical Methods for Transient & Coupled Problems, R. Lewis, E.Hinton, P. Betess, B.Schrefler, eds., Pineridge, Swansea, 1984, 382-393.
7. Homogenization and optimal bounds in linear elasticity, *with F. Murat*, Arch. Rat. Mech. Anal., 94(4), 1986, 307-334.
8. Homogenization and mechanical dissipation in thermoviscoelasticity, *with P. Suquet*, Arch. Rat. Mech. Anal. , 96(3), 1986, 265-293.
9. A contour integral and an energy release rate in thermoelasticity, *with A.G. Herrmann*, Int. J. Sol. Struct., 22(7), 1986, 759-766.
10. Asymptotic thermoelastic behavior of flat plates, *with D. Blanchard*, Quat. Appl. Math., 45(4), 1987, 645-667.
11. Optimal bounds for conduction in two-dimensional, multiphase, polycrystalline Media, *with G.W. Milton*, J. Stat. Phys., 46, 1987, 161-177.
12. Asymptotic transient thermoelastic behavior, **in:** Proceedings of the IUTAM Symposium on Thermomechanical Coupling in Solids, H.D. Bui , Q.S. Nguyen, eds. ,Elsevier, Amsterdam, 1987, 291-304.
13. Study of a doubly non-linear heat equation with no growth assumption on the parabolic term, *with D. Blanchard*, S.I.A.M. J. Math. Anal., 19(5), 1988, 1032-1056.
14. Optimal bounds for conduction in two-dimensional, two phase, anisotropic media, *with F. Murat*, **in:** Proceedings of the Durham Symposium on Non-Classical Continuum Mechanics, R.J. Knops, ed., Cambridge Press, Cambridge, 1987,197-212.
15. Homogenization in thermoelasticity, *with S. Brahim-Otsmane, F. Murat*, **in:** Random Media and Composites, R.V. Kohn, G. W. Milton, eds. , S.I.A.M. Press, Philadelphia, 1989, 13-45.
16. Comportement effectif d'un mélange de matériaux élastiques isotropes ayant le même module de cisaillement, *with L. Tartar*, C.R.A.S. Paris(1), 312, 1991, 301-307.
17. A few results on a class of degenerate parabolic equations, *with D. Blanchard*, Ann. Sc. Norm. Sup. Pisa, 18(2), 1991, 213-249.
18. Mathematical analysis of the damage evolution in a brittle damaging continuous medium, *with J.-J. Marigo*, **in:** Mécanique, modélisation numérique et dynamique des matériaux, Publications du L.M.A., 124, Presses du C.N.R.S., 1991, 245-276.

19. Correctors for the homogenization of the wave and heat equations, *with S. Brahim-Otsmane, F. Murat*, J. Math. Pures et Appl., 71(2), 1992, 197-231.
20. Homogenisation of a class of fourth order equations with application to incompressible elasticity, Proc. Royal Soc. Edinburgh, 120A, 1992, 25-46.
21. Oscillations and energy densities in the wave equation, *with F. Murat*, Comm. Part. Dif. Eq., 17(11&12), 1992, 1785-1865.
22. A numerical algorithm for topology and shape optimization, *with G. Allaire*, **in:** Topology Design of Structures, M. Bendsoe, C. Mota Soares, eds., Kluwer, Dordrecht, 1993, 239-248.
23. Stable damage evolution in a brittle continuous medium, *with J.-J. Marigo*, Eur. J. Mech. A/Solids, 12(2), 1993, 149-189.
24. Combined effects of homogenization and singular perturbations in elasticity, *with S. Muller*, J. reine angew. Math., 454, 1994, 1-35 (featured AMS review).
25. Sets of conductivity and elasticity tensors stable under lamination, *with G.W. Milton*, Comm. Pure Appl. Math., 47, 1994, 1-23.
26. Relaxation in BV versus quasiconvexification in $W^{1,p}$; a model for the interaction between fracture and damage, *with I. Fonseca*, Calc. Variations and PDE, 3(4), 1995, 407-446.
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