

Curriculum Vita

Name: Frederic B. Weissler
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Current position: Professor Emeritus
Université Paris 13, Sorbonne Paris Cité
LAGA - Institut Galilée
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93430 Villetaneuse
France

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75014 Paris
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Birthdate and place of birth: 20 April 1949, Washington D.C., U.S.A.
Citizenship: U.S.A.

University degrees

B.A. (mathematics and physics) 1971, Yale University, New Haven
summa cum laude, phi beta kappa

M.A. (mathematics) 1974, University of California, Berkeley

Ph.D. (mathematics) 1976, University of California, Berkeley
Danforth Foundation graduate fellowship

Main area of mathematical interest:

Nonlinear partial differential equations, semilinear evolution equations.

Equations studied:

- nonlinear heat equation
- nonlinear Schrödinger equation
- Korteweg-de Vries and generalized Korteweg-de Vries equations
- complex Ginzburg-Landau equation

Topics studied:

- local well-posedness, especially for highly singular initial values
- finite time blowup of solutions
- long-time asymptotic behavior of global solutions
- self-similar solutions

Professional experience

- 1976-1978 Postdoctoral Research Fellow and Instructor
Department of Mathematics
University of Texas, Austin, TX
- 1978-1981 Assistant Professor
Department of Mathematics
Brown University, Providence, RI
- 1981-1986 Assistant Professor
(on leave: 9/84 to 12/85) Department of Mathematics
University of Texas, Austin, TX
- 1984-1985 Research Associate
Institute for Mathematics and its Applications
University of Minnesota, Minneapolis, MN
- Sept.-Dec. 1985 Visiting Assistant Professor
Mathematics Research Center
University of Wisconsin, Madison, WI
- 1986-1989 Associate Professor
(on leave: 9/87 to 8/89) Department of Mathematics
Texas A&M University, College Station, TX
- 1987-1989 Professeur Associé (visiting professor)
Laboratoire Analyse Numérique
Université Pierre et Marie Curie
4, place Jussieu
75252 Paris Cedex 05
France
- 1989-1990 Professeur Associé (visiting professor)
Département de Mathématiques
Université de Nantes
2, rue de la Houssinière
44072 Nantes Cedex 03
France
- 1990-1992 Maître de Conférences
Département de Mathématiques
UFR de Sciences et Technologie
Université Paris XII Val de Marne
Avenue du Général De Gaulle
94010 Créteil Cedex
France
- 1992-2015 Professor of Mathematics (“classe exceptionnelle”)
Université Paris 13, Sorbonne Paris Cité
LAGA - Institut Galilée
99 Avenue J.-B. Clément
93430 Villetaneuse
France

Distinctions

1. International meeting, “Equations d’évolution non-linéaires”, organized on the occasion of my 60th birthday, 30 Mar 2009 - 1 Apr 2009, Insitut Henri Poincaré, Paris.
2. Twenty-eight invited plenary talks at international meetings.
3. Several invited “short courses” of 3 to 6 lectures at foreign universities or meetings (UIC 2018, Tohoku 2016, Hammamet 2012, Tokyo 2003, Hokkaido 2000, Bratislava 1991).
4. More than 100 invited talks at universities (US, France, Brazil, Europe, Tunisia, Japan).

Special area of expertise: Comparison of French and US systems of higher education

1. 11 years experience in faculty and research positions at 5 major US universities.
2. 28 years experience in faculty and research positions at 4 major French universities.
3. Presentation of the French system of higher education, March 11, 2008, Mona Bismarck Foundation, Paris, sponsored by AAWE and AARO.
4. Author (or co-author) of 3 chapters in *Beyond the Bac : Higher Education in France and Abroad*, AAWE, Paris, 2011.
 - (i) Introduction to the French Higher Education System, pp. 22-29.
 - (ii) University Studies in France, pp. 30-42.
 - (iii) (with N. Dardel) Becoming a Doctor in the French System, pp. 69-74.

Doctoral students

1. Mr. Slim Tayachi
Title of thesis: *Solutions autosimilaires d'équations semi-linéaires paraboliques avec terme de gradient non linéaire.*
Date of thesis defense and granting of diploma: 12 January 1996
Current status : Professor, University of Tunis, El Manar

2. Ms. Anne Kelfa
Title of thesis: *Etude des solutions autosimilaires d'une équation d'évolution et propriétés des solutions périodiques d'une équation différentielle.*
Date of thesis defense and granting of diploma: 17 January 1996
Current status : "Statisticien informaticien", Banque de France

3. Mr. Tej-eddine Ghoul
Title of thesis: *Etude de solutions non globales d'équations d'évolution non linéaires.*
Date of thesis defense and granting of diploma: 5 December 2011
Current status : Assitant Professor, NYU Abu Dhabi

4. Mr. Byrame Ben Slimene
Title of thesis: *Comportement asymptotique des solutions globales pour quelques problèmes paraboliques non linéaires singuliers.*
Thesis in co-direction with the University of Tunis, El Manar
Co-directer : Professor Slim Tayachi.
Date of thesis defense and granting of diploma: 13 December 2017
Current status : Professor, Preparatory Institute of Nabeul, University of Carthage (Tunis)

Administrative, teaching and research responsibilities

1. Head of the research group “Modeling and scientific computation”, Laboratoire d’Analyse, Géométrie et Applications, UMR CNRS 7539, University of Paris 13, July 2002 - September 2015.
2. Head of mathematics and statistics teaching in the “U.F.R. de Sciences Economiques et de Gestion” (i.e. College of Economics and Management) at the University of Paris 13, October 1992 - September 2014.
3. Co-organizer of the joint seminar “economy and mathematics”, departments of Economics and Mathematics, University of Paris 13, 2008-09.
4. Co-organizer of the international meeting : “Défis actuels de la finance : Nouvelles approches théoriques et gestion des risques bancaires et financiers”, University of Paris 13, November 2009.
5. Member of the “conseil du laboratoire”, Laboratoire d’Analyse, Géométrie et Applications, UMR CNRS 7539, University of Paris 13, May 1999 - January 2006.
6. Director of the degree program (Maîtrise de Sciences et de Techniques): “Mathematical models in international economics and finance”, jointly administered by the U.F.R. de Sciences Economiques et de Gestion and the “Institut Galilée” (i.e. the College of Natural Sciences) at the University of Paris 13, June 1993 - July 2000.
7. Member of the “bureau” (executive committee) of the U.F.R. de Sciences Economiques et de Gestion at the University of Paris 13, May 1993 - July 2000.

Editorial and service activities

1. Member of the editorial board of the *Gazette des Mathématiciens* (analogous to the Notices of the A.M.S.), May 1997 - Oct 1999.
2. Member of the editorial board of the *Nagoya Mathematical Journal*:
 - associate editor, 5/2003 to 3/2008;
 - editor, 3/2008 to 3/2014;
 - associate editor, 3/2014 to 12/2015.
3. Member of an NSF evaluation panel, 2/2008.
4. Member of the Committee of Visitors of the Division of Mathematical Sciences, NSF, 2/2013.

Research support

- “Prime d’encadrement doctoral et de recherche” (PEDR), salary supplement of approximately 1 1/2 months, attributed for research and direction of doctoral students: awarded for the periods 1991-1995, 1996-2000, 2000-2004, 2004-2008 and 2008-2012.
- “Prime d’excellence scientifique” (PES), new version of the PEDR, awarded for the period 2012-2016.
- Six months “delegation” to CNRS (essentially a half-year full salary research Sabbatical).
 - 2004-05
 - 2010-11
- Six month Sabbatical leave, fall semester 2011-12.

Invited lectures

- 1976 : Ohio State University, Columbus
- 1978 : Brown University, Providence
University of California, Berkeley
AMS Summer Institute in Harmonic Analysis, Maine
- 1979 : University of California, Berkeley
Yale University, New Haven
- 1980 : University of Connecticut, Storrs
AMS meeting, Providence, Rhode Island
- 1981 : Vanderbilt University, Nashville
University of Pennsylvania, Philadelphia
Rutgers University, New Brunswick
Indiana University, Bloomington
Michigan State University, East Lansing
University of Southern California, Los Angeles
University of Wisconsin, Madison
- 1982 : University of California, San Diego
AMS meeting, Baton Rouge, Louisiana
Cornell University, Ithaca
Brown University, Providence
Northwestern University, Evanston
- 1983 : AMS Summer Institute in Nonlinear Functional Analysis, Berkeley, California
Courant Institute of Mathematical Sciences, New York
- 1984 : Technische Hogeschool, Delft, The Netherlands
Ecole Normale Supérieure, Paris
University of Paris VI, Paris
Institute for Mathematics and its Applications, Minneapolis
Mathematisches Forschungsinstitut Oberwolfach, Germany
International Centre for Theoretical Physics, Trieste, Italy
- 1985 : Georgetown University, Washington, D.C.
Princeton University
Brown University, Providence
Iowa State University, Ames
University of Minnesota, Minneapolis
University of Chicago
University of Colorado, Boulder
Ecole Normale Supérieure, Paris
University of Paris VI, Paris
University of Metz, France
University of Wisconsin, Madison
University of Pittsburgh

- 1986 : Emory University, Atlanta
Tulane University, New Orleans
University of Tennessee, Knoxville
University of Rochester
University of Paris VI, Paris
University of Metz
Microprogram on Nonlinear Diffusion Equations and their Equilibrium States,
Mathematical Sciences Research Institute, Berkeley, California
- 1987 : Workshop on Nonlinear PDE's, Provo, Utah
- 1988 : University of Paris XI, Orsay, France
University of Heidelberg, Germany
International meeting : Problèmes Elliptiques et Paraboliques Non Linéaires,
Nancy, France
Ecole Polytechnique, Palaiseau, France
International Conference on Nonlinear Evolution Equations and Their Applications,
Visegrád, Hungary
AMS-IMS-SIAM Joint Summer Research Conference on Geometric Problems
in Fourier Analysis, Bowdoin College, Brunswick, Maine
University of Delaware, Newark
Ecole Normale Supérieure, Paris
- 1989 : University of Minnesota, Minneapolis
Universidad Autonoma de Madrid, Spain
Mathematisches Forschungsinstitut Oberwolfach, Germany
University of Nancy, France
"Journées de Metz", University of Metz, France
International meeting : Nonlinear Diffusion Equations and their Equilibrium States,
Scotland
University of Paris XI, Orsay, France
- 1990 : University of Bordeaux I, France
University of Leiden, The Netherlands
Pennsylvania State University, University Park
- 1991 : Fourth Czecho-Slovak Summer School on Dynamical Systems,
Bratislava, Slovakia (series of three lectures)
AMS-IMS-SIAM Joint Summer Research Conference "Systems of Coupled Oscillators",
Seattle, Washington
University of Texas, Austin
Pennsylvania State University, University Park
University of Paris XI, Orsay, France
- 1992 : University of Leiden, The Netherlands
Ecole Normale Supérieure, Paris
- 1993 : Workshop on Partial Differential Equations in Geometry and Physics :
Theory and Numerical Methods, Confédération Européenne
des Universités du Rhin Supérieur (EUCOR), Freiburg, Germany
Mathematisches Forschungsinstitut Oberwolfach, Germany
University of Paris XI, Orsay, France
- 1994 : ETH, Zürich, Switzerland
University of Metz, France

- 1995 : University of Orléans, France
Mathematisches Forschungsinstitut Oberwolfach, Germany
- 1996 : University of Zürich, Switzerland
- 1997 : University of Texas, Austin
University of North Texas, Denton (Millican lecture)
University of Maryland, College Park
University of Paris XI, Orsay, France
Mathematisches Forschungsinstitut Oberwolfach, Germany
- 1998 : Brown University, Providence, Rhode Island
University of Texas, Austin
University of North Texas, Denton (Millican lecture)
Workshop : Recent progress on nonlinear Schrödinger equations,
University of Paris XI, Orsay, France
- 1999 : Workshop on nonlinear evolution equations, University of Amiens, France
Workshop on nonlinear evolution equations, University of Versailles Saint-Quentin, France
- 2000 : First Northeastern Symposium on Mathematical Analysis, Sapporo, Japan
principal lecturer, series of three lectures.
University of Texas, Austin (2 seminar talks + 1 colloquium talk)
University of Pennsylvania, Philadelphia
University of Maryland, College Park
- 2001 : University of Marne-la-Vallée, France
Mathematisches Forschungsinstitut Oberwolfach, Germany
University of Texas, Austin (2 seminar talks)
Texas A&M University, College Station
- 2002 : Workshop on Nonlinear Phenomena in Science, Lorentz Center,
Leiden University, The Netherlands
University of Tunis, Tunisia
Symposium on Partial Differential Equations to celebrate the Seventy-fifth
Birthday of James Serrin, University of Perugia, Italy
University of Illinois at Chicago
University of Paris XI, Orsay, France
CEA, Saclay, France
- 2003 : University of Tokyo, Japan (1 colloquium talk + a 4-lecture seminar series)
- 2005 : University of Chicago
University of Illinois at Chicago
Institute for Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil
Federal University of Rio de Janeiro (UFRJ), Brazil
University of Campinas (Unicamp), Brazil
Conference: Infinite dimensional dynamical systems, CIRM, Luminy
Taiwan-France joint conference on nonlinear partial differential equations
and related topics, Taipei, Taiwan
- 2006 : Water Waves : Conference in honor of Jerry Bona, Bordeaux, France
AIMS' sixth international conference on dynamical systems, differential
equations and applications (2 invited special session talks), Poitiers, France
University of Illinois at Chicago
SIAM Conference on nonlinear waves and coherent structures, Seattle WA
University of the Basque Country, Bilbao, Spain

- 2007 : First Joint International Meeting between the American Mathematical Society
and the Polish Mathematical Society, Warsaw, Poland
Equadiff 2007, Vienna, Austria
University of Tours, France
Institute for Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil
Federal University of Rio de Janeiro (UFRJ), Brazil
- 2008 : University of Evry, France
Equations of fluid dynamics: analysis, numerical methods, simulation;
international meeting in honor of Matania Ben Artzi, Paris, France
Ryukoku University, Japan
University of Tokyo, Japan
Third Euro-Japanese Workshop on Blowup, Sendai, Japan
- 2009 : $T = \infty$: Evolution equations and dynamical systems : Conference on the occasion
of the 60th birthday of Alain Haraux, Hammamet, Tunisia
- 2010 : Université de Franche-Comté, Besançon
International conference on Partial Differential Equations, for the 60th birthday of
Michel Chipot, Poitiers, France
Nonlinear PDE and Boundary Value Problems with Measure Data, Conference on the
occasion of Marie-Françoise Bidaut-Véron and Laurent Véron's 60th birthdays,
Technion, Israel Institute of Technology, Haifa, Israel
Hebrew University, Jerusalem, Israel
Brown University, Providence, Rhode Island
University of Illinois at Chicago
Carnegie Mellon University, Pittsburgh
University of Southern California, Los Angeles
- 2011 : University of Tunis El Manar, Tunisia
- 2012 : University of Tours, France
University of Cambridge, England
School and Workshop on Nonlinear Evolution Equations And Applications
Cimpa-Unesco-MESR-Micinn-Tunisia (6 hour short course), Hammamet
University of Zürich
Dynamics of nonlinear dispersive and fluid mechanics equations,
CNRS-NSFC joint Sino-French Summer Institute of Mathematics, Beijing
Fifth Euro-Japanese Workshop on Blow-up, CIRM, Luminy, France
- 2013 : University of Illinois at Chicago
- 2014 : University of Tours, France
International Symposium on Applied Analysis in honour of Professor Michel Chipot
Institut für Mathematik, University of Zürich
- 2016 : Seventh Euro-Japanese Workshop on Blow-up, Bedlewo, Poland
University of Nagoya, Japan (colloquium lecture)
University of Tokyo, Japan
Tohoku University, Japan (colloquium lecture + 10 hour graduate class)
- 2017 : University of Lisbon, Portugal
- 2017 : University of Illinois at Chicago (seminar + 4 hour graduate class)

Publications

Articles in refereed journals:

- [1] Logarithmic Sobolev inequalities for the heat-diffusion semigroup, *Trans. Amer. Math. Soc.* **237** (1978), 255-269.
- [2] Construction of non-linear semi-groups using product formulas, *Israel J. Math.* **29** (1978), 265-275.
- [3] Two-point inequalities, the Hermite semigroup, and the Gauss-Weierstrass semigroup, *J. Functional Analysis* **32** (1979), 102-121.
- [4] Semilinear evolution equations in Banach spaces, *J. Functional Analysis* **32** (1979), 277-296.
- [5] Local existence and nonexistence for semilinear parabolic equations in L^p , *Indiana Univ. Math. J.* **29** (1980), 79-102.
- [6] Logarithmic Sobolev inequalities and hypercontractive estimates on the circle, *J. Functional Analysis* **37** (1980), 218-234.
- [7] The Navier-Stokes initial value problem in L^p , *Arch. Rational Mech. Anal.* **74** (1980), 219-230.
- [8] Existence and non-existence of global solutions for a semilinear heat equation, *Israel J. Math.* **38** (1981), 29-40.
- [9] (with A. Haraux) Non-uniqueness for a semilinear initial value problem, *Indiana Univ. Math. J.* **31** (1982), 167-189.
- [10] (with C.E. Mueller) Hypercontractivity for the heat semigroup for ultraspherical polynomials and on the n-sphere, *J. Functional Analysis* **48** (1982), 252-283.
- [11] Single point blow-up for a semilinear initial value problem, *J. Differential Equations* **55** (1984), 204-224.
- [12] An L^∞ blow-up estimate for a nonlinear heat equation, *Commun. on Pure and Appl. Math.* **38** (1985), 291-295.
- [13] (with C.E. Mueller) Single point blow-up for a general semilinear heat equation, *Indiana Univ. Math. J.* **34** (1985), 881-913.
- [14] Asymptotic analysis of an ordinary differential equation and non-uniqueness for a semilinear partial differential equation, *Arch. Rational Mech. Anal.* **91** (1986), 231-245.
- [15] Rapidly decaying solutions of an ordinary differential equation with applications to semilinear elliptic and parabolic partial differential equations, *Arch. Rational Mech. Anal.* **91** (1986), 247-266.
- [16] (with L. A. Peletier and D. Terman) On the equation $\Delta u + (1/2)x \cdot \nabla u + f(u) = 0$, *Arch. Rational Mech. Anal.* **94** (1986), 83-99.
- [17] (with T. Cazenave) The Cauchy problem for the nonlinear Schrödinger equation in H^1 , *Manuscripta Math.* **61** (1988), 477-494.
- [18] (with M. Chipot) Some blow-up results for a nonlinear parabolic equation with a gradient term, *SIAM Jnl. Math. Anal.* **20** (1989), 886-907.
- [19] (with T. Cazenave, A. Haraux, and L. Vazquez) Nonlinear effects in the wave equation with a cubic restoring force, *Computational Mechanics* **5** (1989), 49-72.
- [20] (with K. McLeod and W.C. Troy) Radial solutions of $\Delta u + f(u) = 0$ with prescribed numbers of zeroes, *J. Differential Equations* **83** (1990), 368-378.

- [21] (with T. Cazenave) The Cauchy problem for the critical nonlinear Schrödinger equation in H^s , *Nonlinear Anal. T.M.A.* **14** (1990), 807-836.
- [22] (with O. Kavian) Finite energy self-similar solutions of a nonlinear wave equation, *Commun. in Part. Diff. Eq.* **15** (1990), 1381-1420.
- [23] (with T. Cazenave) The structure of solutions to the pseudo-conformally invariant nonlinear Schrödinger equation, *Proc. Royal Soc. Edinburgh* **117A** (1991), 251-273.
- [24] (with T. Cazenave) Rapidly decaying solutions of the nonlinear Schrödinger equation, *Comm. Math. Phys.* **147** (1992), 75-100.
- [25] (with T. Cazenave and A. Haraux) A class of nonlinear completely integrable abstract wave equations, *Jnl. Dynam. Diff. Eqns.* **5** (1993), 129-154.
- [26] (with T. Cazenave and A. Haraux) Detailed asymptotics for a convex Hamiltonian system with two degrees of freedom, *Jnl. Dynam. Diff. Eqns.* **5** (1993), 155-187.
- [27] (with O. Kavian) Self-similar solutions of the pseudo-conformally invariant nonlinear Schrödinger equation, *Mich. Math. Jnl.* **41** (1994), 151-173.
- [28] (with T. Cazenave) Asymptotically periodic solutions for a class of nonlinear coupled oscillators, *Portugaliae Math.* **52** (1995), 109-123.
- [29] Some remarks concerning iterative methods for linear systems, *SIAM J. Matrix Anal. and Appl.* **16** (1995), 448-461.
- [30] (with T. Cazenave) Unstable simple modes of the nonlinear string, *Quart. Appl. Math.* **LIV** (1996), 287-305.
- [31] (with S. Tayachi and Ph. Souplet) Exact self-similar blow-up of solutions of a semilinear parabolic equation with a nonlinear gradient term, *Indiana Univ. Math. J.* **45** (1996), 655-682.
- [32] (with Ph. Souplet) Self-similar subsolutions and blow-up for nonlinear parabolic equations, *J. Math. Anal. Appl.* **212** (1997), 60-74.
- [33] (with J. A. Iaiia and H. A. Warchall) Localized solutions of sublinear elliptic equations: loitering at the hilltop, *Rocky Mountain J. Math.*, **27** (1997), 1131-1157.
- [34] (with T. Cazenave) Asymptotically self-similar global solutions of the nonlinear Schrödinger and heat equations, *Math. Zeit.* **228** (1998), 83-120.
- [35] (with B. Helffer) On a family of solutions of the second Painlevé equation related to superconductivity, *Euro. J. Appl. Math.* **9** (1998), 223-243.
- [36] (with T. Cazenave) More self-similar solutions of the nonlinear Schrödinger equation, *Nonlin. Diff. Eq. Appl.* **5** (1998), 355-365.
- [37] (with Ph. Souplet) Poincaré's inequality and global solutions of a nonlinear parabolic equation, *Ann. Inst. H. Poincaré - Analyse non Linéaire* **16** (1999), 337-373.
- [38] (with J. Bona) Similarity solutions of the generalized Korteweg-de Vries equation, *Proc. Cam. Phil. Soc.* **127** (1999), 323-351.
- [39] (with S. Snoussi and S. Tayachi) Asymptotically self-similar global solutions of a semi-linear parabolic equation with a nonlinear gradient term, *Proc. Royal Soc. Edinburgh* **129A** (1999), 1291-1307.
- [40] (with T. Cazenave) Scattering theory and self-similar solutions for the nonlinear Schrödinger equation, *SIAM Jnl. Math. Anal.* **31** (2000), 625-650.
- [41] Asymptotically self-similar solutions of the two-power nonlinear Schrödinger equation, *Adv. Diff. Eqns.* **6** (2001), 419-440.

- [42] (with Ph. Souplet and M. Fila) Linear and nonlinear heat equations in L^q_δ spaces and universal bounds for global solutions, *Math. Annalen* **320** (2001), 87-113.
- [43] (with J. Bona) Blow-up of spatially periodic complex-valued solutions of nonlinear dispersive equations, *Indiana Univ. Math. J.* **50** (2001), 759-782.
- [44] (with S. Snoussi and S. Tayachi) Asymptotically self-similar global solutions of a general nonlinear heat equation, *Math. Annalen* **321** (2001), 131-155.
- [45] (with T. Cazenave, F. Dickstein and M. Escobedo) Self-similar solutions of a nonlinear heat equation, *Jnl. Math. Sci. Univ. Tokyo* **8** (2001), 501-540.
- [46] (with H. A. Warchall) Hidden ground states, *Comm. Appl. Anal.* **6** (2002), 73-87.
- [47] (with M. Ben-Artzi and Ph. Souplet) The local theory for viscous Hamilton-Jacobi equations in Lebesgue spaces, *Jnl. Maths. Pures Appl.* **81** (2002), 343-387.
- [48] (with Ph. Souplet) Regular self-similar solutions of the nonlinear heat equation with initial data above the singular steady state, *Ann. Inst. H. Poincaré - Analyse non Linéaire* **20** (2003), 213-235.
- [49] (with T. Cazenave and F. Dickstein) Universal solutions of the heat equation on \mathbb{R}^N , *Discrete and Cont. Dyn. Sys.* **9** (2003), 1105-1132.
- [50] (with T. Cazenave and F. Dickstein) Universal solutions of the nonlinear heat equation on \mathbb{R}^N , *Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5), Vol. 2, Fasc. 1* (2003), 77-117.
- [51] (with T. Cazenave and F. Dickstein) Chaotic behavior of solutions of the Navier-Stokes system in \mathbb{R}^N , *Adv. Diff. Eqns.* **10** (2005), 361-398.
- [52] (with T. Cazenave) Spatial decay and time-asymptotic profiles for solutions of Schrödinger equations, *Indiana Univ. Math. J.* **55** (2006), 75-118.
- [53] (with T. Cazenave and F. Dickstein) A solution of the constant coefficient heat equation on \mathbb{R} with exceptional asymptotic properties: an explicit construction, *Jnl. Maths. Pures Appl.* **85** (2006), 119-150.
- [54] (with T. Cazenave and F. Dickstein) Non-parabolic asymptotic limits of solutions of the heat equation on \mathbb{R}^N , *Jnl. Dynam. Diff. Eqns.* **19** (2007), 789-818.
- [55] (with T. Cazenave and F. Dickstein) An equation whose Fujita critical exponent is not given by scaling, *Nonlinear Anal. T.M.A.* **68** (2008), 862-874.
- [56] (with T. Cazenave and F. Dickstein) Sign-changing stationary solutions and blow up for the nonlinear heat equation in a ball, *Math. Annalen.* **344** (2009) 431-449.
- [57] (with J. Bona) Pole dynamics of interacting solitons and blow up of complex valued solutions to KdV, *Nonlinearity* **22** (2009) 311-349.
- [58] (with T. Cazenave and F. Dickstein) Global existence and blow up for sign-changing solutions of the nonlinear heat equation, *J. Differential Equations* **246** (2009) 2669-2680.
- [59] (with T. Cazenave and F. Dickstein) On the structure of global solutions of the nonlinear heat equation in a ball, *J. Math. Anal. Appl.* **360** (2009), 537-547.
- [60] (with F. Dickstein, N. Mizoguchi and Ph. Souplet) Transversality of stable and Nehari manifolds for a semilinear heat equation, *Calculus of Variations and Partial Differential Equations*, DOI 10.1007/s00526-011-0397-8, **42** (2011), 547-562.
- [61] (with T. Cazenave and F. Dickstein) Spectral properties of stationary solutions of the nonlinear heat equation, *Publi. Mat.* **55** (2011), 185-200.
- [62] (with J. Bona) Traveling fronts of a conservation law with hyper-dissipation, *Adv. Diff. Eqns.* **16** (2011), 917-935.

- [63] (with T. Cazenave and F. Dickstein) Multi-scale multi-profile solutions of evolution equations, *Discrete and Cont. Dyn. Sys. Series S.* **5** (2012), 449-472.
- [64] (with J. Bona and S. Vento) Singularity formation and blowup of complex-valued solutions of the modified KdV equation, *Discrete and Cont. Dyn. Sys.*, **33** (2013), 4811-4840.
- [65] (with T. Cazenave and F. Dickstein) Finite time blowup for a complex Ginzburg-Landau equation, *SIAM J. Math. Anal.*, **45** (2013), 244-266.
- [66] (with S. Tayachi) The nonlinear heat equation with high order mixed derivatives of the Dirac delta as initial value, *Trans. AMS*, **366** (2014), 505-530.
- [67] (with T. Cazenave and F. Dickstein) Standing waves of the complex Ginzburg-Landau equation, *Nonlinear Anal. T.M.A.* **103** (2014), 26-32.
- [68] (with T. Cazenave, S. Correia and F. Dickstein) A Fujita-type blowup result and low energy scattering for a nonlinear Schrödinger equation, *São Paulo J. Math. Sci.* **9** (2015), 146-161. DOI 10.1007/s40863-015-0020-6.
- [69] (with H. Mouajria and S. Tayachi) The heat semigroup on sectorial domains, highly singular initial values, and applications, *J. Evol. Equ.* **16** (2016), 341-364. DOI 10.1007/s00028-015-0305-3.
- [70] (with T. Cazenave and F. Dickstein) Non-regularity in Hölder and Sobolev spaces of solutions to the semilinear heat and Schrödinger equations, *Nagoya Math. J.*, **226** (2017), 44-70. DOI 10.1017/nmj.2016.35.
- [71] (with B. Ben Slimene and S. Tayachi) Well-posedness, global existence and large time behavior for Hardy-Hénon parabolic equations, *Nonlinear Analysis T.M.A.* **152** (2017), 116-148. DOI 10.1016/j.na.2016.12.008.
- [72] (with S. Tayachi) The nonlinear heat equation involving highly singular initial values and new blowup and life span results, *J Elliptic Parabol Equ* **4** (2018), 141-176. DOI 10.1007/s41808-018-0014-5.

Articles accepted for publication in refereed journals:

- [73] (with T. Cazenave, F. Dickstein and I. Naumkin) Sign-changing self-similar solutions of the nonlinear heat equation with positive initial value, *Amer. J. Math.*
- [74] (with T. Cazenave, F. Dickstein and I. Naumkin) Perturbations of self-similar solutions, *Dyn PDEs*

Articles in preparation :

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- [78] (with L. Molinet and S. Vento) Self-similar solutions for the generalized Benjamin-Ono equation.

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Other publications :

Three chapters in *Beyond the Bac : Higher Education in France and Abroad*, AAWE, Paris, 2011.

- (i) Introduction to the French Higher Education System, pp. 22-29.
- (ii) University Studies in France, pp. 30-42.
- (iii) (with N. Dardel) Becoming a Doctor in the French System, pp. 69-74.

Career totals:

- 74 articles published in or accepted by refereed journals
- 4 articles in preparation
- 17 articles appeared in conference proceedings, etc. (5 of which contain results not published elsewhere)
- 2723 Citations (MathSciNet) by 1458 authors (December 2018), including 1 article with more than 400 citations and a total of 4 articles with more than 100 citations each.