

Thomas DUYCKAERTS
Curriculum Vitae

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Département de Mathématiques
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Date of Birth: December 14th, 1976
French citizenship
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POSITIONS

From Sept. 2011: Full professor (first class since Sep. 2015) at Paris 13 University (France).
2005-2011: *Maître de conférences* (assistant professor) at Cergy-Pontoise University (France).
2004-2005: post-doc at *Universidad Autónoma* in Madrid (supervisor: Enrique Zuazua).

EDUCATION AND DIPLOMA

Nov. 2010: Habilitation thesis: *Dynamique des équations dispersives non-linéaires*.
2000-2004: PhD thesis: *Étude haute fréquence de quelques problèmes singuliers d'évolution*, at Paris 11 University (advisor: Nicolas Burq). Defended november 5th, 2004.
1999-2000: *agrégation* of mathematics (teaching exam).
1998-1999: *DEA* (Master of advanced study) of numerical analysis and partial differential equation at Paris 11 University. Master thesis under the supervision of Nicolas Burq.
1997-2001: Student at *École Normale Supérieure* in Paris.

RESEARCH INTERESTS

Partial differential equations, including:

- Nonlinear dispersive equations: well-posedness, blow-up, asymptotic behaviour, classification of solutions.
- Linear dispersive and parabolic equations: propagation of singularities, stability, control, spectral theory.

GRANTS

2012-present: Member of ERC (European Research Council) advanced grant *BLOWDISOL: blow-up, dispersion and solitons*.
2010-present: Member of junior ERC grant *Dispeq: Qualitative study of nonlinear dispersive equations*.
2007-2010: Member of the French ANR (national research agency) grant *Ondes Non Lin: Blow-up, interaction and dispersion for nonlinear waves equations*.
2007-2010: Member of the French ANR grant *ControlFlux: Control of partial differential equations in fluid mechanics*.
2004-2005: Post-doc member of the European research networks *Smart Systems* and *HYKE*.

PHD STUDENTS

Starting Sept 2014: Yang Lang (joint with Frank Merle).
Starting Sept 2013: Giuseppe Negro (joint with Keith Rogers)
Sept 2011-Sept 2014: Lysianne Hari (joint with Clotilde Fermanian-Kammerer).

HONOURS

- Sept-Dec 2015:** Invited professors at the MSRI (Berkeley) for the program *New challenges in PDE: Deterministic dynamics and randomness in high and infinite dimensional systems*.
- Sept. 2015:** National promotion to a first class professor.
- :** Price of the best article 2008 in the journal *Annales de l'IHP, analyses non-linéaires* for the article *On the optimality of the observability inequalities for parabolic and hyperbolic systems with potentials*. with Xu Zhang and Enrique Zuazua.

INVITED TALKS

- Oct. 2015:** MSRI, Berkeley. Workshop *New challenges in PDE: Deterministic dynamics and randomness in high and infinite dimensional systems*
- Jan. 2015:** Evry University. *Analysis Seminar*.
- Sep. 2014:** University of Chicago. Conference in honor of Carlos Kenig.
- June 2014:** CIRM (Marseille, France). Workshop *Schrödinger equation and applications*.
- July 2014:** Hausdorff Institute for Mathematics, Bonn (Germany). *Workshop on real analysis*.
- Apr. 2014:** ETH University (Zürich, Switzerland). *Analysis Seminar*.
- Oct. 2013:** Nice University (France). Workshop of the ERC advanced grant *blow up, dispersion and solitons*.
- Aug. 2013:** Mathematisches Forschungsinstitut Oberwolfach (Germany). Workshop *Non-linear Waves and Dispersive Equations*.
- June 2013:** Kansas State University. NSF/CBMS Regional Conference in the Mathematical Sciences on *The Global Behavior of Solutions to Critical Nonlinear Wave Equations*.
- June 2013:** Ecole Polytechnique (Palaiseau, France). *Critical waves* working group.
- Oct. 2012:** University of Basel (Switzerland). Basel-Fribourg-Zurich *analysis* seminar.
- Oct. 2012:** Paris, *Nonlinear analysis and PDE* joint seminar Paris 6 University/Paris 7 University.
- July 2012:** BICMR, Beijing. *Dynamics of nonlinear dispersive and fluid mechanics equations*, Sino-French Summer Institute of Mathematics.
- June 2011:** Hangzhou (China). *Hangzhou conference on Harmonic Analysis and PDE*.
- Apr. 2011:** Paris 13 University. *Nonlinear partial differential equations* seminar.
- Mar. 2011:** Bordeaux I University. *Mathematical physics and partial differential equations* seminar.
- Feb. 2011:** Paris 11 University. *Numerical analysis and partial differential equations* seminar.
- Nov. 2010:** Invited talks at the Hausdorff Institute for Mathematics (Bonn).
- Nov. 2010:** Institut Henri Poincaré (Paris). Conference on *Control of dispersive equations*.
- Nov. 2010:** Institut Henri Poincaré (Paris). *Spectral problems in mathematical physics* seminar.
- Sep. 2010:** CIRM (Marseille, France). *Asymptotic Regimes for Schrödinger equation* workshop.
- Sep. 2010:** Madrid, *London Mathematical Society Harmonic Analysis and PDEs Network* meeting.
- Jan. 2010:** Arizona State University. *Analysis Seminar*.
- Jan. 2010:** University of Chicago. *Calderón-Zygmund Analysis Seminar*.
- Nov. 2009:** Milano. *Three dispersive days* workshop.
- Nov. 2009:** Rennes I University. *Analysis seminar*.
- Oct. 2009:** Créteil University. *Partial differential equations* working group.

- Oct. 2009:** London. *Paris-London analysis seminar*.
- Oct. 2009:** Imperial college (London). *Working group on analysis*.
- Sep. 2009:** University of Oxford. *First Meeting on Asymptotics of Operator Semigroups*.
- Apr. 2009:** Henri Poincaré Institute (Paris). Congress on *Nonlinear waves and dispersion*.
- Feb. 2009:** Nantes University (France). *Analysis seminar*.
- Jan. 2009:** Ecole Polytechnique (Palaiseau, France). *X-EDP (partial differential equations) seminar*.
- Dec. 2008:** Laboratoire Jacques-Louis Lions (Paris). *Working group on control theory*.
- Nov. 2008:** Henri Poincaré Institute (Paris). *Spectral problems in mathematical physics seminar*.
- Oct. 2008:** Simion Stoilow Institut of Mathematics (Bucarest, Romania). *Workshop on Partial Differential Equations*.
- Oct. 2008:** Paul Sabatier University (Toulouse). *Seminar of the team Mathematics for Physics and Industry*.
- May 2008:** Elie Cartan Institute (Nancy University). *Partial differential equations and applications seminar*.
- Jan. 2008:** Paris 11 Orsay University. *Working group on partial differential equations*.
- Nov. 2007:** Rennes 1 University. *Partial differential equations seminar*.
- May 2007:** Ecole Normale Supérieure (Paris). *Partial differential equations and nonlinear analysis seminar*.
- Jan. 2007:** Evry University. *Analysis seminar*.
- May 2005:** Cergy-Pontoise University. *Analysis seminar*.
- Oct. 2005:** Paris 11 University. *Numerical analysis and partial differential equations seminar*.
- Mar. 2005:** École Normale Supérieure (Paris). *Partial differential equations seminar*.
- Mar. 2005:** Lille 1 University. *Numerical analysis and partial differential equations seminar*.
- Mar. 2004:** Paris 11 University. *Partial differential working group*.
- Jan. 2004:** École Polytechnique. *Analysis working group of the CMAT (Center of mathematics)*.

MEMBERSHIPS AND SERVICES

- From Jan.2016:** Alternate member of the *Conseil national des universités, section 25* (French national council in pure mathematics).
- From Oct. 2014:** Head of the *Comité d'experts* (committee supervising hiring committees) in pure mathematics at Paris 13 University.
- From Oct. 2014:** In charge of the research Master in Mathematics at Paris 13 University.
- From Sep. 2013:** Coorganizer of the PDE seminar at Paris 13 University.
- May 2012, May 2013:** Member of hiring committees for 2 *maîtres de conférences* (assistant professors) positions in Paris 13 University.
- From Sep. 2011:** Member of the joint *HDR commission* (committe supervising habilitation thesis) for parisian universities.
- From Sep.2011:** Member of the PhD thesis committee of the department of mathematics of Paris 13 University.
- 2009:** Member of the hiring committee for a *maîtres de conférences* at Versailles University.
- 2009:** Member of the hiring committee for a *maîtres de conférences* at Lille 1 University.
- May 2008, May 2010:** Member of hiring committees for 2 *maîtres de conférences* positions in Cergy-Pontoise University.

Sep. 2007-Sep.2010: In charge of the *agrégation* (national teaching exam) training at the University of Cergy-Pontoise.

2007-2010: In charge of the mathematics research library at the University of Cergy-Pontoise.

2005-2010: Coorganisor of the seminar “Geometry, PDE and Mathematical Physics” at the University of Cergy-Pontoise.

Thesis committees: Member of the PhD thesis committees of David Parlongue (2012, Paris 13 U.), Mohamad Darwich (2013, University of Tours), Farah Abou Shakra (2013, Paris 13 U.), Cécile Huneau (2014, ENS/Paris 13 U.) and Asma Azaiez (2014, Paris 13 U.).

Referee for the PhD thesis of Mohamad Darwich.

Editorial responsibilities: Associate editor for the journal *Mathematical control and related fields*.

Referee’s reports: Advances in Mathematics, American Journal of Mathematics, Asymptotic Analysis, Collectanea Mathematica, Communication in Mathematical Physics, Communication in Partial Differential Equations, Communication in Pure and Applied Mathematics, Comptes Rendus de l’Académie des Sciences, Discrete and Continuous Dynamical Systems, Duke Mathematical Journal, Indiana University Mathematical Journal, Journal of Differential Equations, Journal of the European Mathematical Society, Journal of Functional Analysis, Journal de l’Institut Mathématique de Jussieu, Journal of Mathematical Physics, Mathematische Annalen, Mathematical Models and Methods in Applied Sciences, Michigan Mathematical Journal, Nonlinearity, SIAM Journal of Control and Optimization, System and Control Letters, Transaction of the American Mathematical Society, for Zürich Lecture Notes collection and for Mathreviews.

EVENTS ORGANIZED

Nov. 2009: One-day workshop *dispersive waves* (with Frank Merle and Nikolay Tzvetkov).

2009: Semester *Partial differential equations* (University of Cergy-Pontoise, Paris 13 University).

Feb. 2009: One-day workshop *Dynamics of nonlinear dispersive PDEs* at the University of Cergy-Pontoise (with Valeria Banica).

Nov. 2006: One-day workshop *Nonlinear dispersive equations* at the University of Cergy-Pontoise.

Nov. 2005: One-day workshop *On qualitative properties of nonlinear waves* at the University of Cergy-Pontoise (with Frank Merle).