Curriculum Vitæ : Karel Pravda-Starov

Last Name : Pravda-Starov
First name : Karel

Professional address :

IRMAR - Campus de Beaulieu
Université de Rennes 1
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University status and academic positions :

2019–Present: Professeur des Universités (1$^{\text{ère}}$ classe, promotion CNU 25), Université de Rennes 1 (France)

2014–2019: Professeur des Universités (2$^{\text{ème}}$ classe), Université de Rennes 1 (France)

2010–2014: Maître de conférences, Chaire d'Excellence CNRS de Physique Mathématique, Université de Cergy-Pontoise (France)

2008–2010: Lecturer in Pure Mathematics, Imperial College, London (UK)

2007–2008: Hedrick Assistant Professor, UCLA, Los Angeles (USA)

2006–2007: Postdoctoral Researcher, UC Berkeley (USA)

2003–2006: PhD Student at University of Rennes 1, France and Teaching Assistant at École Normale Supérieure de Cachan, antenne de Bretagne, Rennes (France)

1999–2003: Student at école Normale Supérieure de Cachan, antenne de Bretagne and University of Rennes 1, Rennes (France)

1997–1999: Student in Preparatory Classes MPSI and MP*, Lycée Kléber, Strasbourg (France)

Diplomas :

2013: Habilitation (HDR) « De l'analyse microlocale de quelques classes d'équations aux dérivées partielles » defended at the University of Cergy-Pontoise, France, on December 5$^{\text{th}}$, 2013

Referees : Bernard Helffer (Université de Paris Sud, France), Johannes Sjöstrand (Université de Bourgogne, France), Tong Yang (City University of Hong Kong, China)

Defense committee : Radjesvarane Alexandre (Arts et Métiers Paris Tech, France), Vladimir Georgescu (Université de Cergy-Pontoise, France), Bernard Helffer (Université Paris Sud, France), Nicolas Lerner (Université Pierre et Marie Curie, France), San Vũ Ngọc (Université de Rennes 1, France), Johannes Sjöstrand (Université de Bourgogne, France)

2006: PhD thesis in Mathematics entitled « Étude du pseudo-spectre d'opérateurs non auto-adjoints » under the directorship of Prof. Nicolas Lerner, defended at the University of Rennes 1, France, on June 12th, 2006

Referees : Nils Dencker (Lund University, Sweden), Johannes Sjöstrand (École Polytechnique, France)

Defense committee : Bernard Helffer (Université de Paris Sud, France), Nicolas Lerner (Université de Rennes 1, France), Francis Nier (Université de Rennes 1, France), Didier Robert (Université de Nantes, France), Johannes Sjöstrand (École Polytechnique, France)

2003: DEA in Mathematics, University of Rennes 1, with honors

2002: Nationally ranked 12th at the Agrégation of Mathematics

2001:
— Maîtrise in Pure Mathematics, University of Rennes 1, with honors
— Maîtrise in Applied Mathematics, University of Rennes 1, with honors
— Licence in Physics, University of Rennes 1, with honors

2000:
— Licence in Mathematics, University of Rennes 1, with honors
— Licence in Computer Science, University of Rennes 1, with honors

1997: Baccalauréat, with honors

Publications :

36. J. Martin, K. Pravda-Starov, *Spectral inequalities for combinations of Hermite functions and null-controllability for evolution equations enjoying Gelfand Shilov smoothing effects*, submitted for publication, arXiv :2007.08169

35. K. Beauchard, P. Jaming, K. Pravda-Starov, *Spectral inequality for finite combinations of Hermite functions and null-controllability of hypoelliptic quadratic equations*, submitted for publication, arXiv :1804.04895

34. J. Martin, K. Pravda-Starov, *Geometric conditions for the exact controllability of fractional free and harmonic Schrödinger equations*, accepted for publication in Journal of Evolution Equations (2020)

33. K. Beauchard, M. Egidi, K. Pravda-Starov, *Geometric conditions for the null-controllability of hypoelliptic quadratic parabolic equations with moving control supports*, accepted for publication in Comptes Rendus - Mathématique (2020)

32. K. Pravda-Starov, *Estimations de résolvante et localisation du spectre pour certaines classes d'opérateurs pseudo-différentiels semi-classiques non autoadjoints, d'après Dencker, Sjöstrand et Zworski*, Séminaire Bourbaki, 72ème année, 2019-2020, Novembre 2019, Exposé no. 1169

31. K. Pravda-Starov, *Generalized Mehler formula for time-dependent non selfadjoint quadratic operators*, Math. Ann. 372 (2018), no. 3-4, 1335-1382

30. M. Hitrik, K. Pravda-Starov, Joe Viola, *From semigroups to subelliptic estimates for quadratic operators*, Trans. Amer. Math. Soc. 370 (2018), no. 10, 7391-7415

29. K. Beauchard, K. Pravda-Starov, *Null-controllability of hypoelliptic quadratic differential equations*, J. Éc. polytech. Math. 5 (2018), 1-43

28. K. Pravda-Starov, L. Rodino, P. Wahlberg, *Propagation of Gabor singularities for Schrödinger equations with quadratic Hamiltonians*, Math. Nachr. 291 (2018), 128-159

27. M. Hitrik, K. Pravda-Starov, Joe Viola, *Short-time asymptotics of the regularizing effect for semigroups generated by quadratic operators*, Bull. Sci. Math. 141 (2017), no. 7, 615-675

26. K. Beauchard, K. Pravda-Starov, *Null-controllability of non autonomous Ornstein-Uhlenbeck equations*, J. Math. Anal. Appl. 456 (2017), no. 1, 496-524

25. N. Lerner, Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *Gelfand-Shilov and Gevrey smoothing effect for the spatially inhomogeneous non-cutoff Kac equation*, J. Funct. Anal. 269 (2015), no. 2, 459-535

24. M. Ottobre, G. Pavliotis, K. Pravda-Starov, *Some remarks on degenerate hypoelliptic Ornstein-Uhlenbeck operators*, J. Math. Anal. Appl. 429 (2015), no. 2, 676-712

23. A. Parmeggiani, K. Pravda-Starov, *Semiclassical hypoelliptic estimates with a loss of many derivatives*, Rev. Mat. Iberoam. 30 (2014), no. 4, 1439-1478

22. N. Lerner, Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *Gelfand-Shilov smoothing properties of the radially symmetric spatially homogeneous Boltzmann equation without angular cutoff*, J. Differential Equations, 256 (2014), no. 2, 797-831

21. Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *A remark on the ultra-analytic smoothing properties of the spatially homogeneous Landau equation*, Kinet. Relat. Models, 6 (2013), no. 4, 715-727

20. N. Lerner, Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *Phase space structure and functional calculus for the linearized Landau and Boltzmann operators*, Kinet. Relat. Models, 6 (2013), no. 3, 625-648

19. N. Lerner, Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *Spectral and phase space analysis of the linearized non-cutoff Kac collision operator*, J. Math. Pures Appl. 100, (2013), no. 6, 832-867

18. M. Hitrik, K. Pravda-Starov, *Eigenvalues and subelliptic estimates for non-selfadjoint semiclassical operators with double characteristics*, Ann. Inst. Fourier, 63 (2013), no. 3, 985-1032

17. M. Ottobre, G. Pavliotis, K. Pravda-Starov, *Exponential return to equilibrium for hypoelliptic quadratic systems*, J. Funct. Anal. 262 (2012), no. 9, 4000-4039

16. K. Pravda-Starov, *Subelliptic estimates for overdetermined systems of quadratic differential operators*, Osaka J. Math. 49 (2012), no. 3, 563-611

15. N. Lerner, Y. Morimoto, K. Pravda-Starov, *Hypoelliptic estimates for a linear model of the Boltzmann equation without angular cutoff*, Comm. Partial Differential Equations, 37 (2012), no. 2, 234-284

14. N. Lerner, Y. Morimoto, K. Pravda-Starov, C.-J. Xu, *Hermite basis diagonalization for the non-cutoff radially symmetric linearized Boltzmann operator*,

Séminaire Laurent Schwartz – EDP et applications (2011-2012), Exp. No. 23, 10 pages, École Polytechnique, Palaiseau

13. F. Hérau, K. Pravda-Starov, *Anisotropic hypoelliptic estimates for Landau-type operators*, J. Math. Pures Appl. 95 (2011) 513-552

12. N. Lerner, K. Pravda-Starov, *Sharp hypoelliptic estimates for some kinetic equations*, (2011) 11 pages, Proceedings of the International Conference the 26th Matsuyama Camp, Ryukoku University, Kyoto

11. K. Pravda-Starov, *Subelliptic estimates for quadratic differential operators*, Amer. J. Math. 133 (2011), no. 1, 39-89

10. M. Hitrik, K. Pravda-Starov, *Semiclassical hypoelliptic estimates for non-selfadjoint operators with double characteristics*, Comm. Partial Differential Equations, 35 (2010), no. 6, 988-1028

9. M. Hitrik, K. Pravda-Starov, *Spectra and semigroup smoothing for non-elliptic quadratic operators*, Math. Ann. 344 (2009), no. 4, 801-846

8. K. Pravda-Starov, *On the pseudospectrum of elliptic quadratic differential operators*, Duke Math. J. 145 (2008), no. 2, 249-279

7. K. Pravda-Starov, *Pseudospectrum for a class of semiclassical operators*, Bull. Soc. Math. France, 136 (2008), no. 3, 329-372

6. K. Pravda-Starov, *Contraction semigroups of elliptic quadratic differential operators*, Math. Z. 259 (2008), no. 2, 363-391

5. K. Pravda-Starov, *Explicit examples of nonsolvable weakly hyperbolic operators with real coefficients*, Bull. Braz. Math. Soc. 38 (2007), no. 3, 397-425

4. K. Pravda-Starov, *Boundary pseudospectral behaviour for semi-classical operators in one dimension*, Int. Math. Res. Not. Vol. 2007, article ID rnm029, 31 pages

3. K. Pravda-Starov, *Sur le pseudo-spectre de certaines classes d'opérateurs pseudo-différentiels non auto-adjoints*, Séminaire : équations aux Dérivées Partielles, 2006-2007, Exp. No. XV, 33 pages, école Polytechnique, Palaiseau

2. K. Pravda-Starov, *A complete study of the pseudo-spectrum for the rotated harmonic oscillator*, J. London Math. Soc. 73 (2006), no. 2, 745-761

1. K. Pravda-Starov, *A general result about pseudo-spectrum for Schrödinger operators*, Proc. R. Soc. Lond. Ser. A Math. Phys. Eng. Sci. 460 (2004) 471-477

Talks and seminars :

- *Pseudo-spectre et estimation de résolvante*, Applied Analysis and Pure Analysis joint meeting by the Universités de Nantes et Rennes 1, Rennes, France, on 22/01/2004
- *Etude du pseudo-spectre d'opérateurs non auto-adjoints*, PhD thesis defense, Université de Rennes 1, France, on 12/06/2006
- *Pseudospectrum of elliptic quadratic differential operators*, Seminar PDE/ Analysis, University of California, Berkeley, USA, on 25/09/2006
- *Pseudospectrum of elliptic quadratic differential operators*, UCLA Analysis Seminar, University of California, Los Angeles, USA, on 01/12/2006
- *Sur le pseudo-spectre de certaines classes d'opérateurs pseudo-différentiels non auto-adjoints*, Analysis Seminar, Université de Poitiers, France, on 18/01/ 2007

- *Sur le pseudo-spectre de certaines classes d'opérateurs pseudo-différentiels non auto-adjoints*, Mathematical Physics Seminar, Université de Bordeaux 1, France, on 23/01/2007
- *Sur le pseudo-spectre de certaines classes d'opérateurs pseudo-différentiels non auto-adjoints*, PDE Seminar, Université de Nantes, France, on 02/02/2007
- *Sur le pseudo-spectre des opérateurs différentiels quadratiques elliptiques*, Working group, Université de Paris 7, France, on 05/02/2007
- *Sur le pseudo-spectre de certaines classes d'opérateurs pseudo-différentiels non auto-adjoints*, X-PDE Seminar, école Polytechnique, CMLS, on 13/02/ 2007
- *Contraction semigroups of elliptic quadratic differential operators*, Workshop Cinhypwit II, Transverse methods for cinetic equations, Institut Henri Poincaré, Paris, on 21/06/2007
- *On the pseudospectrum of certain non-selfadjoint pseudodifferential operators*, Clay Mathematics Institute, Workshop : Solvability and Spectral Instability, Cambridge, MA, USA, on 18/09/2007
- *Contraction semigroups of elliptic quadratic differential operators*, UCLA Analysis Seminar, University of California, Los Angeles, USA, on 12/10/2007
- *Spectres et propriétés des semi-groupes des opérateurs différentiels quadratiques non elliptiques*, Analysis Seminar, Université de Reims, on 14/10/2008
- *Spectres et propriétés des semi-groupes des opérateurs différentiels quadratiques non elliptiques*, Analysis-Probability Seminar, Université de Paris Dauphine, France, on 04/11/2008
- *Spectra and semigroup smoothing for non-elliptic quadratic operators*, London-Paris Analysis Seminar, Institut Henri Poincaré, Paris, France, on 01/12/2008
- *Spectra and semigroup smoothing for non-elliptic quadratic operators*, International Workshop « PDEs and Function Spaces », Imperial College, London, UK, on 03/12/2008
- *On the pseudospectrum of certain non-selfadjoint pseudodifferential operators*, Maxwell Institute for Mathematical Science, Edinburgh, UK, on 26/02/2009
- *On semiclassical non-selfadjoint operators with double characteristics*, London Analysis Seminar, University College London, UK, on 30/04/2009
- *Semiclassical resolvent estimates for non-selfadjoint operators with double characteristics*, The Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria, on 08/07/2009
- *Spectral and pseudospectral properties of semiclassical non selfadjoint operators with double characteristics*, Workshop GDR « Dynamique quantique », March 24 − 26th, 2010, Université de Bourgogne, Dijon, France
- *On semiclassical non-selfadjoint operators with double characteristics*, Séminaire Géométrie, EDP et Physique Mathématique, Université de Cergy Pontoise, France, on 07/04/2010
- *Subelliptic estimates for overdetermined systems of quadratic differential operators*, Workshop, Spectral Instability and Microlocal Analysis, June 15 − 17th, 2010, University of Lund, Sweden
- *Anisotropic hypoelliptic estimates for Landau-type operators*, PDE seminar, Kyoto University, Japan, on 23/07/2010
- *On semiclassical non-selfadjoint operators with double characteristics*, PDE seminar, University of Hyogo, Japan, on 02/09/2010

- *Subelliptic estimates for overdetermined systems of quadratic differential operators*, PDE seminar, University of Hyogo, Japan, on 02/09/2010
- *On semiclassical non-selfadjoint operators with double characteristics*, PDE seminar, Nagoya University, Japan, on 27/09/2010
- *Analyse microlocale des opérateurs à caractéristiques doubles*, Colloquium, Université de Cergy-Pontoise, France, on 18/10/2010
- *Anisotropic hypoelliptic estimates for Landau-type operators*, Séminaire : Problèmes Spectraux en Physique Mathématique, Institut Henri Poincaré, Paris, France, on 08/11/2010
- *Optimal hypoelliptic estimates for a class of kinetic equations*, 26th Matsuyama Camp, Recent Development on Partial Differential Equations, Conference dedicated to the 60th Birthday of Professor Yoshinori Morimoto, Ryukoku University, Kyoto, Japan, 6-9th January 2011
- *Optimal hypoelliptic estimates for a class of kinetic equations*, 5$^{\text{èmes}}$ rencontres de l'ANR NONAa, Opérateurs Non-Autoadjoints et Analyse Semiclassique, Université de Paris Sud, Orsay, France, on 27/01/2011
- *Hypoelliptic estimates for a linear model of the Boltzmann equation without angular cutoff*, Séminaire Équations aux dérivées partielles, Université de Rennes 1, France, on 10/02/2011
- *Singular space theory for non-elliptic quadratic operators*, short course (8h), Osaka University, Japan, 21/02/2011-25/02/2011
- *Hypoelliptic estimates for a linear model of the Boltzmann equation without angular cutoff*, Séminaire Analyse semi-classique & Physique mathématique, Université de Paris Nord, France, on 14/03/2011
- *Hypoelliptic estimates for a linear model of the Boltzmann equation without angular cutoff*, Applied mathematics and mathematical physics seminar, Imperial College, London, UK, on 29/03/2011
- *Spectral properties and resolvent estimates for non-selfadjoint operators with double characteristics*, Séminaire de Calcul Scientifique du CERMICS, École des Ponts, Paris, France, on 07/04/2011
- *Hypoelliptic estimates for a linear model of the Boltzmann equation without angular cutoff*, PDE-Spectral theory Workshop, Université de Bourgogne, Dijon, France, on 18/05/2011
- *Exponential return to equilibrium for hypoelliptic quadratic systems*, 8th International ISAAC Congress, August 22-27, 2011, Peoples' Friendship University of Russia, Moscow, Russia
- *Exponential return to equilibrium for hypoelliptic quadratic systems*, Analysis seminar, Wuhan University, China, on 21/09/2011
- *Exponential return to equilibrium for hypoelliptic quadratic systems*, Analysis seminar, Shanghai Jiao Tong University, China, on 26/09/2011
- *Diagonalization of the linearized non-cutoff radially symmetric Boltzmann operator*, Seminario di Analisi Matematica, Alma Mater Studiorum, Università di Bologna, Italy, on 06/12/2011
- *Diagonalization of the linearized non-cutoff radially symmetric Boltzmann operator*, Conference ANR NONAa « Spectral analysis of non selfadjoint operators », December 12-16, 2011, CIRM, Marseille, France

- *Phase space analysis of the linearized non-cutoff radially symmetric Boltzmann operator*, Ludwig-Maximilians-Universität München, Germany, on 09/02/2012
- *Spectral and phase space analysis of the linearized non-cutoff Kac collision operator*, Séminaire du MAPMO, Université d'Orléans, France, on 19/04/2012
- *Structure microlocale et calcul fonctionnel pour les opérateurs de collision de Landau et de Boltzmann*, Séminaire Analyse numérique - Équations aux dérivées partielles, Université de Lille 1, France, on 14/06/2012
- *Phase space analysis and functional calculus for the linearized Boltzmann operator*, PDE seminar, Osaka University, Japan, on 16/11/2012
- *Phase space analysis and functional calculus for the linearized Boltzmann operator*, PDE working group, City University of Hong Kong, Hong Kong, on 21/11/2012
- *Ultra-analytic smoothing properties of the radially symmetric spatially homogeneous Boltzmann equation without angular cutoff*, Workshop on Analytic Microlocal Analysis, Northwestern University, Chicago, USA, 20-24th May 2013
- *Propriétés spectrales et estimations de résolvante pour des opérateurs pseudo-différentiels à caractéristiques doubles*, Séminaire de Physique Mathématique, Université Bordeaux 1, France, on 08/10/2013
- *Spectral properties and resolvent estimates for pseudodifferential operators with double characteristics*, Seminario di equazioni alle derivate parziali, Università di Pisa, Italy, on 30/10/2013
- *De l'analyse microlocale de quelques classes d'équations aux dérivées partielles*, Habilitation defense, Université de Cergy-Pontoise, France, on 05/12/2013
- *De l'analyse microlocale de quelques classes d'équations aux dérivées partielles*, Soutenance d'Habilitation à Diriger des Recherches, Université de Cergy-Pontoise, France, on 05/12/2013
- *Paysage pseudospectral autour d'un point de caractéristique double*, Groupe de travail d'Analyse semi-classique & Physique mathématique, Université de Paris Nord, France, on 03/02/2014
- *Paysage pseudospectral autour d'un point de caractéristique double*, Séminaire d'équations aux dérivées partielles, Université de Rennes 1, France, on 13/02/2014
- *Paysage pseudospectral autour d'un point de caractéristique double*, Groupe de travail "Problèmes spectraux et Physique mathématique", Université de Paris Sud, France, on 26/03/2014
- *Pseudospectral landscape around a doubly characteristic point*, 10th AIMS conference on dynamical systems, differential equations and applications, Instituto de Ciencias Matemáticas & Universidad Autónoma de Madrid, Madrid, Spain, 7-11th July 2014
- *Quelques remarques sur les propriétés régularisantes de l'équation de Boltzmann*, Journée de l'IRMAR, Université de Rennes 1, France, on 21/10/2014
- *Propagation du front d'onde de Gabor pour des équations de Schrödinger avec des hamiltoniens quadratiques*, séminaire d'analyse, Université de Nantes, France, on 06/03/2015

- *Propagation of Gabor singularities for Schrödinger equations with quadratic Hamiltonians*, Seminar of the Basque Center for Applied Mathematics, Bilbao, Spain, on 17/03/2015
- *Propagation du front d'onde de Gabor pour des équations de Schrödinger avec des hamiltoniens quadratiques*, Séminaire Mathématique Physique, Université de Bourgogne, Dijon, on 11/09/2015
- *Propagation du front d'onde de Gabor pour des équations de Schrödinger avec des hamiltoniens quadratiques*, 13$^{\text{ème}}$ Journée de l'équipe Analyse Numérique de l'IRMAR, Université de Rennes 1, on 25/02/2016
- *Pseudospectra and spectral instabilities of non-selfadjoint operators*, Gravity team working group, CENTRA, Instituto Superior Técnico, Lisbon, Portugal, on 14/04/2016
- *Propagation of Gabor singularities for Schrödinger equations with quadratic Hamiltonians*, PDE working group, Ritsumeikan University, Kyoto, Japan, on 25/05/2016
- *Null-controllability of hypoelliptic quadratic differential equations*, Workshop on the Boltzmann Equation, Microlocal Analysis and Related Topics, 27-29th May 2016, Kyoto University, Japan
- *Propagation du front d'onde de Gabor pour des équations de Schrödinger avec des hamiltoniens quadratiques*, Séminaire d'analyse appliquée, Université d'Aix-Marseille, France, on 25/10/2016
- *Generalized Mehler formula for time-dependent non selfadjoint quadratic operators and propagation of singularities*, Séminaire Mathématique-Physique, Université de Bourgogne, Dijon, France, on 24/05/2017
- *Generalized Mehler formula for time-dependent non selfadjoint quadratic operators and propagation of singularities*, Groupe de travail semi-classique, Université de Paris-Nord, France, on 19/06/2017
- *Generalized Mehler formula for time-dependent non selfadjoint quadratic operators and propagation of singularities*, Conférence "AGM and LPTM : The First 25 Years", Université de Cergy-Pontoise, France, 26-30th June 2017
- *Generalized Mehler formula for time-dependent non selfadjoint quadratic operators and propagation of singularities*, 9th St.Petersburg Conference in Spectral Theory, St.Petersburg, Russia, 3-6th July 2017
- *Spectral inequality for finite combinations of Hermite functions and null-controllability*, Groupe de travail semi-classique, Université de Paris-Nord, on 19/11/2018
- *Sufficient geometric conditions for the null-controllability of evolution equations enjoying Gelfand-Shilov smoothing properties*, Workshop "Qualitative behaviour of kinetic equations and related problems : numerical and theoretical aspects", Hausdorff Research Institute For Mathematics, Universität Bonn, Germany, 3-7th June 2019
- *Estimations de résolvante et localisation du spectre pour certaines classes d'opérateurs pseudo-différentiels semi-classiques non-autoadjoints, d'après Dencker, Sjöstrand et Zworski*, Séminaire Bourbaki, 72ème année, 2019-2020, Novembre 2019, Exposé no. 1169, Institut Henri Poincaré, Paris, France, on 16/11/2019

- *Uncertainty principles and null-controllability of evolution equations enjoying Gelfand-Shilov smoothing effects*, International Conference on Pseudodifferential Operators, Ghent Analysis & PDE Center, Ghent University/ZOOM, 7-8th July 2020

Number of talks by countries (Total : 71)

Austria (1), Belgium (1), China (2), France (38), Germany (2), Hong Kong (1), Italy (2), Japan (9), Portugal (1), Russia (2), Spain (2), Sweden (1), United Kingdom (4), United States of America (5)

Selected invitations

- Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, March 2004, 1 month
- Clay Mathematics Institute, Cambridge, MA, USA, September 2007, 1 week
- Université de Rennes 1, France, Invited professor position, May 2009, 2 weeks
- The Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria, July 2009, 3 weeks
- Kyoto University, Japan, July-September 2010, 3 months
- Osaka University, Japan, February 2011, 2 weeks
- Université de Rouen, France, March 2011, 1 week
- Imperial College, London, UK, March 2011, 1 week
- Wuhan University, China, September-October 2011, 2 months
- Università di Bologna, Italy, November 2011, 1 month
- Kyoto University, Japan, November-December 2012, 1 month
- City University of Hong Kong, China, November 2012, 1 week
- Università di Pisa, Italy, November 2013, 2 weeks
- Kyoto University, Japan, January 2014, 2 weeks
- Instituto Superior Técnico, Lisbon, Portugal, April 2016, 1 week
- Kyoto University, Japan, May 2016, 1 week

Administrative responsabilities

- Member of the Editorial Board of the Journal of Pseudo Differential Operators and Applications, Birkhäuser, since 2015
- Member of the scientific committee of the Groupement de Recherche, Analyse des Équations aux Dérivées Partielles, 2009-2013
- Organizer of the Séminaire Géométrie, EDP et Physique Mathématique, Université de Cergy-Pontoise, 2010-2012
- Organizer of the Paris-London analysis seminar, since 2009
- Head organizer of the London analysis seminar, 2008-2010
- Organizer of the Imperial analysis seminar, Imperial College, 2008-2009
- Organizer of the workshop "Microlocal Day", Université de Cergy-Pontoise, on 14/05/2012
- Co-organizer of the "Conférence en l'honneur de Michel Pierre", École Normale Supérieure de Rennes, 27/06/2014-28/06/2014
- Head of the PDE Team, IRMAR, Université de Rennes 1, 2015-2018
- Director of "Magistère de Mathématiques de Rennes", Université de Rennes 1 & ENS Rennes, 2015-2020

- Director of "Licence 3 de Mathématiques", Université de Rennes 1, since 01/09/2018
- Member of the UFR committee, Université de Rennes 1, since 01/07/2015
- Member of the UFR scientific committee, Université de Rennes 1, since 01/07/2015
- Co-organizer of the workshop "DimaScat : Scattering theory and spectral asymptotics of differential operators - in the honour of Dimitri Yafaev", Université de Rennes 1, 20/04/2016-22/04/2016
- Co-organizer of the workshop "Analysis of transport equations : Vlasov equation and related models", Université de Rennes 1, 17/05/2017-19/05/2017
- Co-organizer of the workshop "Journées Jeunes EDPistes 2019", GDR AEDP, INSA Rennes, 20/03/2019-22/03/2019
- Co-organizer of the summer school "From kinetic equations to statistical mechanics", Thematic semester 2021 - Mathematical Physics and Geometry, Centre Henri Lebesgue, St-Jean-de-Monts, France, 28/06/2021-02/07/2021

Others

- London Mathematical Society Grant holder, ref. 3916, 2009
- Japan Society for Promotion of Science Award 2010 (JSPS London)
- Grant "Prime d'encadrement doctoral et de recherche" (PEDR) from 01/10/2016 to 31/09/2020
- Opponent for Jens Wittsten PhD defense, Centre for Mathematical Sciences, Lund University, Sweden, on 23/04/2010
- Member of the PhD defense committee of Mohamed Najeme, Université de Rouen, France, on 19/06/2013
- Member of the PhD defense committee of Thomas Ourmières-Bonafos, Université de Rennes 1, France, on 01/10/2014
- Member of the PhD defense committee of Virgile Robbe, Université de Nantes, France, on 28/08/2015
- Referee and member of the PhD defense committee of Martin Vogel, Université de Bourgogne, France, on 10/09/2015
- Member of the PhD defense committee of Ophélie Rouby, Université de Rennes 1, France, on 29/11/2016
- Referee and member of the PhD defense committee of Marouane Assal, Université de Bordeaux, France, on 12/05/2017
- Member of the PhD defense committee and PhD director of Pierig Keraval, Université de Rennes 1, France, on 20/12/2018. PhD supervised together with Nicolas Raymond
- Member of the PhD defense committee of Mona Ben Said, Université Paris-Nord, France, on 30/09/2019
- Member of the PhD defense committee and PhD director of Paul Alphonse, Université de Rennes 1, France, on 05/06/2020
- Member of hiring committees : Université de Cergy-Pontoise (MCF 2011), Université de Rennes 1 (PR 2015)
- President of high shool diploma committee (Lycée Sévigné, Cesson-Sévigné, July 2015)