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CURRICULUM VITAE

Education

November 10, 2011: **Habilitation thesis**, University of Cergy-Pontoise.

1998/2002: **Ph.D.** in Mathematics at the University of Lille.

ADVISOR: S. De Bièvre

TITLE: *A Hamiltonian model for linear friction in a homogeneous medium.*

DEFENSE: 12 December 2002.

1998: Agrégation Externe de Mathématiques.

1995/1999: Student at the Ecole Normale Supérieure de Cachan.

Employment

Sept. 2017- Aug. 2018: CNRS researcher, Montreal UMI, McGill University.

Sept. 2009-Feb. 2010: CNRS researcher, at the University of Cergy-Pontoise.

Since Sept. 2007: **Maître de Conférence (associate professor)** at the University of Cergy-Pontoise.

Sept. 2006-Aug. 2007: **ATER(teaching assistant)** at the University of Cergy-Pontoise.

Sept. 2005-Aug. 2006: **ATER(teaching assistant)** at the University of Toulon.

Sept. 2004-Aug. 2005: **ATER(teaching assistant)** at the University of Grenoble.

Summer 2004: Invited at the CRM, Montreal.

Jan. 2003-May 2004: **Post-doctoral** fellow at Warsaw University.

Fall 2002: **ATER (teaching assistant)** at the University of Lille.

Awards

Prime d'Excellence Scientifique of the University of Cergy: 2009/2013, 2013/2017, 2017/2021.

Teaching

Since Sept. 2007: **Associate professor** at the university of Cergy-Pontoise.

2006/2007: **Teaching assistant** at the university of Cergy-Pontoise.

2005/2006: **Teaching assistant** at the university of Toulon.

2004/2005: **Teaching assistant** at the university of Grenoble.

1998/2002: **Teaching assistant** at the University of Lille.

Publications

Published or accepted papers

- [18] L. Bruneau, V. Jakšić, Y. Last, C.-A. Pillet. *Crystalline conductance and absolutely continuous spectrum of 1D samples*. **Lett. Math. Phys.** 106, vol 6, 787-797 (2016).
- [17] L. Bruneau, V. Jakšić, Y. Last, C.-A. Pillet. *Conductance and absolutely continuous spectrum of 1D samples*. **Comm. Math. Phys.** 344, 959-981 (2016).
- [16] L. Bruneau, V. Jakšić, Y. Last, C.-A. Pillet. *Landauer-Büttiker and Thouless conductance*. **Comm. Math. Phys.** 338, 347-366 (2015).
- [15] L. Bruneau. *Mixing properties of the one-atom maser*. **J. Stat. Phys.** 155, vol 5, 888-908 (2014).
- [14] L. Bruneau, A. Joye, M. Merkli. *Repeated interactions in open quantum systems*. **J. Math. Phys.** 55, 075204 (2014).
- [13] L. Bruneau, V. Jakšić, C.-A. Pillet. *Landauer-Büttiker formula and Schrödinger conjecture*. **Comm. Math. Phys.** 319, issue 2, 501-513 (2013).
- [12] L. Bruneau, S. De Bièvre, C.-A. Pillet. *Scattering induced current in a tight-binding band*. **J. Math. Phys.** 52, 022109 (2011).
- [11] L. Bruneau, J. Dereziński, V. Georgescu. *Homogeneous Schrödinger operators on half-line*. **Annales Henri Poincaré**, 12, vol 3, 547-590 (2011).
- [10] L. Bruneau, A. Joye, M. Merkli. *Repeated and continuous interactions in open quantum systems*. **Annales Henri Poincaré**, 10, vol 7, 1251-1284 (2010).
- [9] L. Bruneau, C.-A. Pillet. *Thermal relaxation of a QED cavity*. **J. Stat. Phys.** 134, vol 5-6, 1071-1095 (2009).
- [8] L. Bruneau, A. Joye, M. Merkli. *Infinite products of random matrices and repeated interaction quantum dynamics*. **Ann. Inst. Henri Poincaré Probab. Stat.**, 46, vol 2, 442-464 (2010).
- [7] L. Bruneau, F. Germinet. *On the singularity of random matrices with independent entries*. **Proc. Amer. Math. Soc.** 137, vol 3, 787-792 (2009).
- [6] L. Bruneau, A. Joye, M. Merkli. *Random repeated interaction quantum systems*. **Comm. Math. Phys.** 284, 553-581 (2008).
- [5] L. Bruneau. *Ground state for a quantum Hamiltonian describing friction*. **Canadian Journal of Maths.** 59, vol 5, 897-916 (2007).
- [4] L. Bruneau, J. Dereziński. *Bogoliubov Hamiltonians and one-parameter groups of Bogoliubov transformations*. **J. Math. Phys.** 48, vol 2 (2007).
- [3] L. Bruneau, A. Joye, M. Merkli. *Asymptotics of repeated quantum interaction systems*. **J. Func. Anal.** 239, 310-344 (2006).
- [2] L. Bruneau, J. Dereziński. *Pauli-Fierz Hamiltonians defined as quadratic forms*. **Reports in Math. Phys.** 54, 169-199 (2004).
- [1] L. Bruneau, S. De Bièvre. *A Hamiltonian model for linear friction in a homogeneous medium*. **Comm. Math. Phys.** 229, 511-542 (2002).

Notes and proceedings

- [iii] L. Bruneau, V. Jakšić, Y. Last, C.-A. Pillet. *What is absolutely continuous spectrum?* Proceedings of ICMP 2015. Expanded version on arXiv 1602.01893

- [ii] L. Bruneau. *Repeated interaction quantum systems*. Proceedings de “Inhomogeneous Random Systems 2007”, **Markov Process. Rel. Fields.** 14, vol 3, 345-364 (2008).
- [i] L. Bruneau. *The ground state problem for a quantum Hamiltonian describing friction*. **C.R. Acad. Sci. Paris**, Ser I. 339, 151-156 (2004).

Conferences and Seminars

Talks in Conferences:

- Oct. 2018 Workshop *Entropic fluctuation relations in mathematics and physics*, Montreal.
- Feb. 2017 Meeting of the GDR *Quantum Dynamics*, Toulon.
- May 2016 Workshop *Open Quantum Systems*, Grenoble.
- July 2014 Mini-course in the summer program *Current Topics in Mathematical Physics*, Montreal.
- June 2014 Conference *Spectral Days*, Marseille.
- April 2014 Workshop *Theoretical and Numerical Aspects of Quantum Transport*, Aalborg.
- July 2013 Summer school *Advances in Open Quantum Systems*, Autrans.
- Aug. 2012 *Franco-Romanian workshop on Applied Mathematics*, Bucarest.
- July 2011 mini-course at the summer school *Non-equilibrium Statistical Mechanics*, Montreal.
- Dec. 2010 Journées *Modèles mathématiques de la théorie quantique des champs*, École Polytechnique.
- Nov. 2010 Meeting *Open Quantum Systems*, Grenoble.
- Nov. 2009 Workshop *Open Quantum Systems*, Cergy.
- April 2009 Workshop *Mathematical aspects of quantum field theory*, Bordeaux.
- Jan. 2009 Workshop *Resonances in Mathematical Physics*, Marseille.
- Feb. 2008 Workshop *Systèmes ouverts et hors équilibre*, Orléans.
- June 2007 Workshop *Large quantum systems*, Warwick.
- Jan. 2007 Workshop *Inhomogeneous random systems*, Paris.
- Nov. 2006 Workshop *Open systems days*, Marseille.
- March 2006 Meeting of the GDRE *Mathematics and quantum physics*, Bologne.
- April 2005 Meeting of the european network *Analysis and large quantum systems*, Munich.
- Sept. 2004 Conference *Qmath 9*, Giens.
- Aug. 2004 Workshop *Dynamical systems in statistical mechanics*, Montreal.
- Dec. 2003 Meeting of the european network *Analysis and large quantum systems*, Vienna.
- Jan. 2001 *Journées semi-classique*, Paris 13.

Seminars:

Aarhus, Bordeaux (2), Cergy-Pontoise (4), Ecole des Ponts et Chaussées, Grenoble (5), Lille (3), Lyon (2), Marseille -CPT (2), McGill-Montreal (5), Nantes, Paris-IHP (2), Orsay (3), Paris 7 (2), Paris 13, Rennes, Toulouse, Warsaw (3).

Organization of events

Conferences

- June 2016 Workshop “*Spectral Theory and Mathematical Physics*” at the University of Cergy (with T. Daudé and V. Georgescu).
- Sept. 2015 Workshop “*Journées AGM*” at the University of Cergy (with T. Daudé, F. Fillastre, E. Locherbach and N. Tzvetkov).
- June 2015 Workshop “*Quantum Spin Systems*” at the University of Cergy (with F. Koukiou, B. Nachtergaele and R. Sims).
- June 2013 Workshop “*Entropy in Quantum Mechanics: Recent Advances*” at the University of Cergy (with V. Jaksic, F. Koukiou, M. Lewin and R. Seiringer).
- Summer 2011 Joint semester Cergy-Pontoise and McGill-CRM “*Frontiers in Mathematical Physics*” (with V. Jaksic, R. Livi, C.-A. Pillet and R. Seiringer).
- Nov. 2009 Workshop “*Systèmes quantiques ouverts*” at the University of Cergy (with S. Attal).
- June 2009 One-day workshop “*Systèmes quantiques infinis*” at the University of Cergy (with M. Lewin).
- Jan. 2009 “*Symposium in honor of Michael Aizenmann*” on the occasion of his Doctorat Honoris Causa at the University of Cergy (with T. Duyckaerts, F. Germinet and M. Lewin).
- 2008-2015 General organization of the *Journées thématiques* of the Maths Departement (with M. Lewin).
- Jan. 2008 Conference *Spectral Problems in Mathematical Physics* at the University of Cergy (with F. Germinet and M. Lewin).

Seminars

- 2007 / – “Mathematical Physics” seminar at the University of Cergy-Pontoise (with M. Lewin).
- 2005 / 2006 “Rigorous Statistical Mechanics and non-equilibrium phenomena” working group at CPT (with C.A. Pillet and P. Briet).

NetWorks and Projects

- Coordinator, with T. Daudé and A. Shirikyan, of the project “Structural properties of non-equilibrium steady states in statistical mechanics : an international collaboration with McGill University” (financed by the ISITE project Paris-Seine).
- Member of the ANR project “Nonstops” (Oct. 2017 - Sept. 2021).
- Member of the GDR project “Quantum Dynamics” (2009/2020).
- Member of the ANR project “Ham-Mark” (Sept. 2009 - Aug. 2013).
- Former member of the GDRE project “Mathematics and Quantum Physics” (2000/2008).

Students

PhD

- Jean-François Bougron: Started in October 2015.

- Thibault Ebroussard: Started in Septembre 2013, rédaction de la thèse en cours.

Master

- Loic Renaut (Master 1, 2017)
- Filodemos Papanatsios (Master 2, 2014)
- Daniel Vanzo (Master 1, 2014)
- Annaëlle Turgis (Master 1, 2014)
- Justine Fishera (Master 1, 2012)
- Thomas Dumas (Master 1, 2012)
- Ines Letombe (Master 1, 2011)

Others

- Co-advisor with V. Jakšić of H. Gervais (2010) and M.-A. Mandich (2013), undergraduate students at McGill.
- Undergraduate students: Xavier Duchateau (2008), Alexis Auvray (2011), Yves Lesage (2014).

Comitees and referee duties

Member of PhD committees (* = as a referee)

- H/ Bringuier* (June 2018, Univ. Toulouse III, advisors: P. Cattiaux and C. Pellegrini).
- N. Mourad* (August 2015, Univ. Paris-Est, advisor: E. Cancès).
- S. Paul (October 2012, Univ. Cergy-Pontoise, advisor: M. Lewin).
- C. Rojas-Molina (June 2012, Univ. Cergy-Pontoise, advisor: F. Germinet).

Hiring committees

University of Cergy-Pontoise: 2010 (2 positions), 2018.

University of Toulon: 2009.

Refereing duties

ANR (one project in 2013, one project in 2014)

KILLAM research fellowships (Canada, 2014)

Referee for the journals: Comm. Math. Phys., Ann. Henri Poincaré, J. Stat. Phys., J. Math. Phys., Rev. Math. Phys., Lett. Math. Phys., Ann. Inst. Fourier, Ann. Math. Québec, SIAM J. Math. Anal., J. Phys. A., Contemp. Maths., Adv. in Math. Phys., Journal of Physics: Conference Series.

Other duties

- 2016 / 2020 Member of the “Commission Recherche” of the University of Cergy.
- 2015 / 2019 Alternate member of the Conseil National des Université (Section “Mathematics”).
- 2011 / 2015 Vice-Chair of the Maths Departement at the University of Cergy.
- 2010 / – Member of the board of the Maths laboratory of the University of Cergy.
- 2008 / – Member of the board of the Maths Departement of the University of Cergy.