

# *Ludovick Gagnon*

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## **Current position**

2018- Junior researcher at INRIA Grand-Est (Team Sphinx)

## **Academic training**

2016-2018 ERC Postdoctoral researcher (SCAPDE) at lab. J.A. Dieudonné (Nice, France)  
*Postdoctoral supervisor: Gilles Lebeau*

2013-2016 Université Pierre et Marie Curie (Paris, France)  
**Ph.D. in mathematics**  
*Ph.D. supervisor : Jean-Michel Coron*

2012-2013 Université Pierre et Marie Curie (Paris, France)  
**Master 2 in mathematics (ANEDP)**  
*Mention très bien*

2010-2012 Université Laval (Québec, Canada)  
**M. Sc. in mathematics**

2007-2010 Université Laval (Québec, Canada)  
**B. Sc. in mathematics**

## **Research papers**

Gagnon, L., Lissy, P., Marx, S., A Fredholm transformation for the rapid stabilization of a degenerate parabolic equation, *submitted to SICON*, xx-xx+26

Gagnon, L., Ground state solitary waves local controllability for the nonlinear focusing Schrödinger equation in the mass critical and slightly mass subcritical regime, *submitted to JDE*, xx-xx+19

Buffe, R., Cavalcanti, M., Cavalcanti Domingos, V., Gagnon, L., Control and exponential stability for a transmission problem of a viscoelastic wave equation, *submitted to Ann. Inst. H. Poincaré Anal. Non Linéaire*, xx-xx+19 (*arXiv:2002.04475*)

Gagnon, L., Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *submitted to ESIAM : COCV*, (*arXiv:1711.00448*)

Gagnon, L., J. Urquiza, Uniform Boundary Observability with the Legendre-Galerkin formulations of the 1-D Wave Equation, *accepted in EETC*, 2020, xx-xx+25

Coron, J.-M., Gagnon, L., M. Morancey, Rapid Stabilization of a Linearized 1-D Bilinear Schrödinger Equation, *J. Math. Pures Appl.* 115(9), 2018, 24–73

Gagnon, L., Qualitative Description of the Particle Trajectories for the N-Solitons Solution of the Korteweg-de Vries Equation, *DCDS-A*, 37(3), 2017, 1489–1507

Gagnon, L., Lagrangian Controllability of the 1-D Korteweg-de Vries Equation, *SIAM J. Control Optim.*, 54(6), 2016, 3152–3173

Gagnon, L., Lagrangian Controllability of the Korteweg-de Vries with a Higher Order Velocity Field for the N-Solitons Solution, *European Control Conference, 2015*, 61–66

## **Fundings**

Principal investigator of Associated Team Moustiq  
Member of ANR ODISSE  
Member of ANR TRECOS  
Member of MathAmsud project ACIPDE  
Funding from Réseau franco-brésilien de mathématiques

## **List of communications**

Quelques liens entre la contrôlabilité et l'intégrabilité, *Séminaire EDP à Metz, Metz, France, 2019*

On the link between Controllability and Integrability, *Analysis of PDE seminar of UFRJ, Rio de Janeiro, Brazil, 2019*

On the link between Controllability and Integrability, *UFPB Math. Seminar, Joao Pessoa, Brazil, 2019*

Sufficient Conditions for the observability of N wave equations on manifolds with interfaces, *1st Joint Meeting Brazil-France in Mathematics, Rio de Janeiro, Brazil, 2019*

Sufficient Conditions for the observability of N wave equations on manifolds with interfaces, *International Conference on Elliptic and Parabolic Problems, Gaeta, Italy, 2019*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Séminaire du GIREF, Québec, Canada, 2018*

Un tour d'horizon sur les équations dispersives et leur contrôlabilité, *Groupe de Travail d'EDP de l'IECL, Nancy, France, 2018*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Microlocal analysis, numerical analysis and kinetic equations control conference, Madrid, Spain, 2018*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Journées franco-tunisienne, Tunis, Tunisia, 2018*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *La Thuile Workshop, La Thuile, Italy, 2018*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Séminaire EDP, Nancy, France, 2018*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Groupe de travail de contrôle du LJLL, Paris, France, 2017*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Microlocal analysis, resonances and control theory in PDEs, Sardinia, Italy, 2017*

Rapid stabilization of the bilinear Schrödinger equation, *VII Partial differential equations, optimal design and numerics, Benasque, Spain, 2017*

Sufficient Conditions for the Controllability of Wave Equations with a Transmission Condition at the Interface, *Mathematical Congress of the Americas, Montréal, Canada, 2017*

Stabilisation rapide d'une équation de Schrödinger, *Journées des jeunes edpistes français, Autrans, France, 2017*

Rapid stabilization of abstract linear controllable PDE, *Workshop of controllability and stabilisation of PDE, Recife, Brazil, 2017*

Stabilisation rapide d'une équation bilinéaire de Schrödinger, *MACS seminar, Paris, France, 2016*

Stabilisation rapide d'une équation de Schrödinger, *French-Romanian Conference on Applied Mathematics, Iasi, Romania, 2016*

Uniform Boundary Observability for Polynomial Approximations of the Wave Equation, *SIAM control conference, Paris, France, 2016*

Stabilisation rapide d'une équation de Schrödinger, *Jean-Michel Coron 60th birthday conference, Paris, France, 2016*

Stabilisation rapide d'une équation de Schrödinger, *MACS working group, Paris, France, 2016*

Lagrangian Controllability of the Korteweg-de Vries with a Higher Order Velocity Field for the N-Solitons Solution, *European Control Conference, Linz, Austria, 2015*

On the Local Stabilisation of the 1-D Bilinear Schrödinger Equation, *XVIII colloque panquébécois des étudiants de l'ISM, Montreal, Canada, 2015*

Lagrangian Controllability of the Korteweg-de Vries and Higher Approximation of the Velocity Field of the N-Solitons Solution, *Lions-Magenes days, Pavi, Italy, 2015*

Sur l'obtention de contrôles numériques avec une méthode de Legendre-Galerkin, *Ph.D. students seminar, Laboratoire Jacques-Louis Lions, Paris, France, 2015*

Lagrangian Controllability of the Korteweg-de Vries and Higher Approximation of the Velocity Field of the N-Solitons Solution, *Graduate students portion of the workshop on control systems and identification problems, Valparaiso, Chili, 2015*

Contrôlabilité Lagrangienne de l'équation de Korteweg-de Vries et une approximation d'ordre supérieure du champ de vitesse associé à la solution de N solitons, *Laboratory days, Laboratoire Jacques-Louis Lions, Paris France, 2014*

Une approximation d'ordre supérieure du champ de vitesse associé à la solution de N solitons de l'équation de Korteweg-de Vries, *MACS working group, Paris, France, 2014*

Sur la contrôlabilité globale de l'équation de Korteweg-de Vries et application au transport des eaux polluées dans le régime de l'équation, *GIREF seminar, Quebec, Canada, 2014*

Sur la contrôlabilité globale de l'équation de Korteweg-de Vries et application au transport des eaux polluées dans le régime de l'équation, *XVII-th colloque panquébécois des étudiants de l'ISM, Quebec, Canada, 2014*

Sur l'obtention de contrôles numériques pour l'équation des ondes de Dirichlet avec des méthodes spectrales, *XV colloque panquébécois des étudiants de l'ISM, Montreal, Canada, 2012*

### **Teaching experience**

2014	Lecturer at l'Université Paris 10, Calculus (30h)
2010-2012	Teaching assistant, Université Laval (Calculus 30h, Diff. eq. 2x30h)

### **Scholarships**

2016	Postdoctoral funding FQRNT
2013	Ph.D. scholarship FQRNT

### **Recent implications**

2019-	International Deputy of INRIA Grand-Est
2018	Organiser of the Young Researcher in Control Theory workshop, Gorges du Verdon, France
2018	Organiser of the Microlocal Analysis, Numerical Analysis and Kinetic Equations workshop in Madrid, Spain
2014-2016	Organiser of the Ph.D. student seminar of the LJLL

### **Others**

Languages: French, English  
Programming language : C/C++