

Didier Pilod

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Curriculum Vitae

Education

2006 — Ph.D. in Mathematics, IMPA, Brazil.
1999 — B.S. Mathematics, Université d'Orsay, Paris XI, France.

Appointments

since 2018 — University of Bergen, Researcher
2016-2017 — UFRJ, Rio de Janeiro, Brazil, Associate professor.
2011-2012 — University of Chicago, Visiting scholar.
2007-2016 — UFRJ, Rio de Janeiro, Brazil, Assistant professor.
2006-2007 — IMPA, Brazil, Postdoctoral fellow.

Research grants

since 2018 — Research grant from BFS (Bergen Research Foundation)
Nonlinear dispersive equations: nonlocal operators, dispersive blow-up and the soliton resolution conjecture
2016-2017 — Research grant from CNPq (National Brazilian Center for Scientific and Technological Development)
Qualitative study of global and explosive solutions to dispersive models of Mathematical Physics
2013-2016 — Research grant from CNPq (National Brazilian Center for Scientific and Technological Development)
Global existence and dynamics for some nonlinear dispersive equations

Publications

- [1] — H. Kalisch and D. Pilod, *On the local well-posedness for a full dispersion Boussinesq system with surface tension*, Proc. Amer. Math. Soc., **147** (2019), 2545-2559.
- [2] — L. Molinet, D. Pilod and S. Vento, *On unconditional well-posedness for the periodic modified Korteweg-De Vries equation*, J. Math. Soc. Japan, **71** (2019), no. 1, 147-201.
- [3] — F. Linares, D. Pilod and J.-C. Saut, *The Cauchy problem for the fractional Kadomtsev-Petviashvili equations*, SIAM J. Math. Analysis, **50** (2018), no. 3, 3172-3209.
- [4] — L. Molinet, D. Pilod and S. Vento, *On well-posedness for some dispersive perturbations of Burgers' equation*, Ann. Inst. H. Poincaré An. Non Lin., **35** (2018), no. 7, 1719-1756.
- [5] — L. Molinet, D. Pilod and S. Vento, *Unconditional uniqueness for the modified Korteweg-de Vries equation on the line*, Revista Mat. Iber., **34** (2018), no. 4, 1563-1608.

- [6] — F. Linares, C. Klein, D. Pilod and J.-C. Saut, *On Whitham and related equations*, Studies Appl. Math., **140** (2018), 133-177.
- [7] — Y. Martel and D. Pilod, *Construction of a minimal mass blow-up solution of the modified Benjamin-Ono equation*, Math. Ann., **369** (2017), 153-245.
- [8] — C. E. Kenig and D. Pilod, *Local well-posedness for the KdV hierarchy at high regularity*, Advances Diff. Eq., **21** (2016), 801-836.
- [9] — R. Côte, C. Muñoz, D. Pilod and G. Simpson, *Asymptotic stability of high-dimensional Zakharov-Kuznetsov solitons*, Archives Rational Mechanics Analysis, **220** (2016), 639-710.
- [10] — F. Linares, D. Pilod and J.-C. Saut, *Remarks on the orbital stability of ground state solutions of fKdV and related equations*, Advances Diff. Eq., **20** (2015), 835-858.
- [11] — L. Molinet and D. Pilod, *Bilinear Strichartz estimates for the Zakharov-Kuznetsov equation and applications*, Annal. Inst. H. Poincaré, An. Non Lin., **32** (2015), 347-371.
- [12] — C. E. Kenig and D. Pilod, *Well-posedness for the fifth-order KdV equation in the energy space*, Transactions Amer. Math. Soc., **367** (2015), 2551-2612.
- [13] — F. Linares, D. Pilod and J.-C. Saut, *Dispersive perturbations of Burgers and hyperbolic equations I: local theory*, SIAM J. Math. Anal., **46** (2014), 1505–1537.
- [14] — F. Linares, D. Pilod and J.-C. Saut, *Well-posedness of strongly dispersive two-dimensional surface waves Boussinesq systems*, SIAM J. Math. Anal., **44** (2012), 4195–4221.
- [15] — L. Molinet and D. Pilod, *Global well-posedness and limit behavior for a higher-order Benjamin-Ono equation*, Communication Part. Diff. Eq., **37** (2012), 2050–2080.
- [16] — L. Molinet and D. Pilod, *The Cauchy problem for the Benjamin-Ono equation in L^2 revisited*, Analysis&PDE, **5** (2012), 365–395.
- [17] — F. Linares, D. Pilod and G. Ponce, *Well-posedness for a higher-order Benjamin-Ono equation*, Journal Diff. Eq., **250** (2011), 450–475.
- [18] — R. Moura and D. Pilod, *Local well-Posedness for the nonlocal nonlinear Schrödinger Equation below the energy space*, Advances Diff. Eq., **15** (2010), 925-952.
- [19] — J. Bona and D. Pilod, *Stability of solitary-wave solutions to the Hirota-Satsuma equation*, Discrete Cont. Dyn. Syst. A, **27** (2010), 1397-1413.
- [20] — J. Angulo, C. Matheus and D. Pilod, *Global well-posedness and non-linear stability of periodic traveling waves for a Schrödinger-Benjamin-Ono system*, Comm. Pure Appl. Anal., **8** (2009), 815–844.
- [21] — R. Iório and D. Pilod, *Well-posedness for Hirota-Satsuma's equation*, Differential Integral Equations, **21** (2008), 1177–1192.
- [22] — D. Pilod, *On the Cauchy problem for higher-order nonlinear dispersive equations*, Journal Diff. Eq., **245** (2008), 2055–2077.
- [23] — D. Pilod, *Sharp well-posedness results for the Kuramoto-Velarde equation*, Comm. Pure Appl. Anal., **7** (2008), 867–881.

Preprints

- [1] — Y. Martel and D. Pilod, *Full family of flattening solitary waves for the mass critical generalized KdV equation*, preprint (2019), 62 pages, arXiv:1903.10756.

Visiting Positions

- 01-02 2015 — Ecole Polytechnique, France, 1 month.
09-11 2013 — Ecole Polytechnique, France, 3 months.
10 2010 — University of Illinois at Chicago, 1 month.
04-06 2009 — Institut Henri Poincaré, Paris, France, 3 months.
02 2008 — University of Illinois at Chicago, 1 month.

Some Invited Talks

- 05/2019 — *2019 Workshop on Nonlinear Dispersive Partial Differential Equations and Inverse Scattering*, Fields Institute, Canada.
01/2019 — *10th itinerant workshop in PDEs*, Istituto Nazionale di Alta Matematica, Rome, Italy.
10/2018 — *Dispersion and Integrability*, Pauli Institute, Vienna
06/2018 — *Lund Workshop on Fluid Dynamics and Dispersive Equations*, Lund, Sweden.
12/2017 — *EEQUAD Mathamsud workshop 2017*, Santiago, Chile.
08/2017 — *Workshop on Inverse Scattering and Dispersive PDEs in One Space Dimension*, Fields Institute, Canada.
07/2017 — *Mathematical Congress of the Americas*, Montreal, Canada.
12/2016 — *Second Workshop on Evolution Equations in Valdivia 2016*, Valdivia, Chile.
07/2016 — *V Congreso Latino Americano de Matemática*, Barranquilla, Colombia.
07/2015 — *30 colóquio Brasileiro de Matemática*, IMPA, Brazil.
02/2015 — *Séminaire Laurent Schwartz- EDP et applications*, Ecole Polytechnique, France.
08/2014 — *XV International Conference on Hyperbolic problems, HYP 2014*, IMPA, Brazil.
09/2013 — *Workshop on “Modified dispersion for dispersive equations and systems”* Pauli Institute, Vienna.
08/2013 — *Mathematical Congress of the Americas 2013*, Guanajuato, Mexico.
05/2013 — *Calderón-Zygmund Analysis Seminar*, University of Chicago, USA.
04/2012 — *Analysis Seminar*, Princeton University, USA.
02/2012 — *Calderón-Zygmund Analysis Seminar*, University of Chicago, USA.
05/2011 — *Workshop on Wave Breaking and Global Solutions in the Short-Pulse*, Fields Institute, Toronto, Canada.
02/2011 — *Centennial Congress of the Spanish Royal Mathematical Society*, Avila, Spain.
02/2010 — *Mathematics and its Applications Seminar*, University of Illinois at Chicago.
07/2009 — *27o Colóquio Brasileiro de Matemática.*, IMPA, Rio de Janeiro, Brazil.

Teaching Experience

- spring 2019 — Instructor at UiB in “Measure Theory and Integration”.
2007-2017 — Instructor at UFRJ for Undergraduate Courses such as “Calculus I, II, III, IV” and “Linear algebra”.

2008-2017 — Instructor at UFRJ for Graduate Courses such as “Spectral Theory” (August–December 2008 and 2010), “Measure Theory and Integration” (January–February 2009), “Harmonic Analysis” (August–December 2009 and 2016), “Introduction to Nonlinear Dispersive PDEs” (January–February 2013), “Functional Analysis” (August–December 2014) and “Complex Analysis” (August–December 2015).

2006–2007 — Instructor at IMPA for Graduate Courses such as “Complex Analysis” (August–December 2006) and “Spectral Theory” (March–June 2007).

Master Students

10/2017 — Victor Benicio Vergara Segura, *The sphere packing problem in dimension 8*, joint advising with Cecilia Salgado, UFRJ

07/2011 — Aline Rigueti Barcelos, *Modelisation of surface waves and mathematical justification*, UFRJ.

06/2010 — Gleison do Nascimento Santos, *Calderón’s inequality for commutators and the fractional Leibniz rule*, UFRJ.

PhD Student

since 2018 — Arnaud Eychenne, UiB

02/2015 — Leandro Domingues, *The Cauchy problem for a Benjamin-Ono-Schrödinger system*, UFRJ.

Postdoc

since 2019 — Razvan Mosincat, UiB

Organisation of conferences

June 2019 — *Dispersive Waves and related topics, conference in honor of Gilles Lebeau*, Bergen, Norway.

June 2019 — *Norwegian meeting on PDEs*, Trondheim, Norway.

Other professional informations

2012-2014 — Vice Head of the Mathematics Department at UFRJ

since 2008 — Referee for several scientific journals including *Advances in Mathematics*, *Analysis & PDEs*, *Communications in Mathematical Physics*, *Communications in PDEs*, *International Mathematical Research Notices*, *Journal of Differential Equations*, *Journal of Functional Analysis*, *Journal of Geometric Analysis*, *Nonlinearity*, *Proceedings of the American Mathematical Society*.

Personal Data

Full name: Didier Jacques François Pilod

Born: October 5, 1976, Dijon, France.

Citizenship: France.

Marital Status: Married, 1 child.

Languages: French, Portuguese and English.