

Vincent MILLOT

Date and place of birth : July 20, 1977, Amiens, France
Nationality : French citizen
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Education

2001-2005 : **Ph D** in Applied Mathematics, University Paris VI, **Advisor:** H. Brezis.
2000-2001 : **Master** in Partial Differential Equations and Numerical Analysis, University Paris VI.
1995-2000 : **DEUG, Licence, Maitrise** in Mathematics, University Paris VI.

Professional Experience

09/2005–09/2007 : **Post-Doctoral Associate**, Department of Mathematical Sciences, Carnegie Mellon University.
06/2006–06/2006 : **Visiting position**, SISSA, Italy.
09/2003–08/2004 : **Instructor**, University of Picardie (France).
12/2004–01/2005 and 03/2004–03/2004 : **Predoctoral fellowship** of the European Community, Technion – Israel Institute of Technology, Israel.
10/2004–11/2004 et 10/2002–12/2002 : **Predoctoral fellowship** of the European Community, University Complutense of Madrid, Spain.

Research Interests

General framework: Partial differential equations. Calculus of variations. Geometric measure theory. Applications to condensed matter physics and continuum mechanics.

Precise topics: Sobolev spaces between manifold, BV spaces, Ginzburg-Landau-Schrödinger equations, Γ -convergence, singular perturbation problems, free discontinuities problems, homogenization.

Languages

French : mother tongue. English, Spanish : fluent reading and speaking.

Teaching Experience

- *Calculus II*, Carnegie Mellon University. Academic year 2006-2007.
- *Integration and differential equations*, Carnegie Mellon University. Academic year 2005-2006.
- *Introduction to the numerical analysis of partial differential equations*, University of Picardie. Academic year 2003-2004.
- *Numerical implementation* (Maple), University of Picardie. Academic year 2003-2004.
- *Measure theory*, University of Picardie. Academic year 2003-2004.
- *Linear algebra and analysis*, University of Picardie. Academic year 2003-2004.
- *Statistics*, University of Picardie. Academic year 2003-2004.
- *Mathematics for economics*, University Paris I. Academic year 2001-2002.

Publications

- [7] *Relaxed energies for $H^{1/2}$ -maps with values into the circle and measurable weights*, with Adriano Pisante, (submitted) Prepublication 06-CNA-009 Carnegie Mellon University (80 pages).
- [6] *Energy expansion and vortex location for a two-dimensional rotating Bose-Einstein condensate*, with Radu Ignat, Rev. Math. Phys. **18** (2006), 119–162.
- [5] *The critical velocity for vortex existence in a two-dimensional rotating Bose-Einstein condensate*, with Radu Ignat, J. Funct. Anal. **233** (2006), 260–306.
- [4] *The relaxed energy for S^2 -valued maps and measurable weights*, Ann. Inst. H. Poincaré Analyse Non Linéaire **23** (2006), 135–157.
- [3] *Vortices in a 2d rotating Bose-Einstein condensate*, with Radu Ignat, C. R. Acad. Sci. Paris Sér. I **340** (2005), 571–576.
- [2] *Energy with weight for S^2 -valued maps with prescribed singularities*, Calc. of Var. and Partial Differential Equations **24** (2005), 83–109.
- [1] *Coulomb friction and oscillation: stabilization in finite time for a system of damped oscillators*, with J.I. Díaz, Actas XVIII CEDYA / VIII CMA, (editors) Public. Univ. of Tarragona, 2003 (8 pages).

Communications : Seminars, Workshops and Conferences

- *Conference on Applied Analysis on the Occasion of the 65th Birthday of David Kinderlehrer, contributed talk*, Carnegie Mellon University (USA), October 2006.
- *AMS Meeting, Session “Nonconvex Variational Problems: Recent Advances and Applications”*, University of Salt Lake City (USA), October 2006.
- *Workshop “Singularités en EDP et dans le calcul des variations”*, Centre de Recherche Mathématiques, Montreal (Canada), July 2006.
- *SIAM Conference on Analysis of Partial Differential Equations, Session “Contemporary Developments in Calculus of Variations and PDE”*, Boston (USA), July 2006.
- *Seminar “Applied Mathematics”*, SISSA (Italy), June 2006.
- *Seminar “Applied Mathematics”*, University of Pittsburgh (USA), December 2005.
- *Seminar “Nonlinear Analysis”*, Rutgers University (USA), November 2005.

- *AMS Meeting, Session “Calculus of Variations”*, University of Nebraska (USA), October 2005.
- *Workshop “The Calculus of Variations in 2005”*, Carnegie Mellon University (USA), October 2005.
- *Conference “Frontiers of Applied Analysis”*, Carnegie Mellon University (USA), September 2005.
- *Conference “Degenerate Quantum Gases”*, Fondation des Treilles (France), July 2005.
- *Seminar “Homogénéisation”*, University Paris VI (France), June 2005.
- *Conference “Journées Ginzburg-Landau”*, University Paris XII (France), April 2005.
- *Seminar “PDE and Applied Mathematics”*, Technion (Israel), January 2005 and March 2004.
- *Conference “Nonlinear Partial Differential Equations describing Front Propagation and other Singular Phenomena”*, Lorentz Center, University of Leiden (Netherlands), November 2004.
- *Seminar “Applied Mathematics”*, University Complutense of Madrid (Spain), November 2004 and January 2003.
- *Seminar “Applied Mathematics”*, Institute of Mathematics of the Romanian Academy (Romania), June 2004.
- *Seminar “Analyse non linéaire”*, University Paris VI (France), May 2004.
- *Workshop “Singularities Phenomena in Elliptic and Parabolic Equations”*, Technion (Israel), March 2004.
- *Seminar “Analyse Appliquée”*, University of Picardie, Octobre 2003.
- *Conference “Congreso de Ecuaciones Diferenciales y Aplicaciones”*, University Rovira i Virgili (Spain), September 2003.