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Date of Birth 19/02/1984

Vivien Desveaux

Work experience

Since 2014 **Post-doctoral researcher**, *UPMC and Inria Paris-Rocquencourt*.
Topic: *Data assimilation for an inverse problem coming from transport of pollutants*
Advisors : Jacques Sainte-Marie and Muriel Boulakia

2013-2014 **Post doctoral researcher**, *Maison de la simulation, Saclay*.
Topic: *Relaxation methods for the Euler equations with gravity*

Education

2010–2013 **PhD in Applied Mathematics**, *LMJL, Université de Nantes*.
Subject : *Contribution to the numerical approximation of hyperbolic systems*
Defended on November 26th, 2013. Committee:
- Christophe Berthon (advisor), professor, Université de Nantes
- Stéphane Clain (president), professor, Universidade do Minho
- Yves Coudière (advisor), professor, Université Bordeaux I
- Jean-François Coulombel, CNRS research director, Université de Nantes
- François James (reviewer), professor, Université d'Orléans
- Christian Klingenberg, professor, Universität Würzburg
- Frédéric Lagoutière (reviewer), professor, Université Paris-Sud

2010 **Master's degree**, *Université de Nantes*, Applied Mathematics.

2008 **Agrégation de Mathématiques**, *Competitive examination*.

2005 **Bachelor of Sciences**, *ENS Lyon*, Mathematics and applications.

2004–2008 **Student at École Normale Supérieure de Lyon**.

Invitations in laboratories

July 2014 **Invited researcher**, *Institut für Mathematik*, Würzburg.
Ten days invitation in the wotkgroup of Christian Klingenberg

December 2012 – January 2013 **Visiting PhD student**, *Institut für Mathematik*, Würzburg.
Two month invitation in the workgroup of Christian Klingenberg
Topic: *Well-balanced schemes for Euler equations with gravity*

October 2012 **Visiting PhD student**, *Université de Minho*, Braga (Portugal).
One week invitation to work with Stéphane Clain

Internships

2010 **Industrial internship**, *BRGM*, Orléans (6 months).
Supervisor: Pierre Sochala
Topic: *Development of a hydromechanical modeling tool for geologic storage of CO_2*

2005 **Research internship**, *MAPMO*, Orléans (6 weeks).
Supervisor: François James
Topic: *Modelisation and numerical study of infiltration of rainwater into the soil*

Publications

Papers in peer-reviewed journals

- C. Berthon, Y. Coudière, V. Desveaux,
  Second-order MUSCL schemes based on Dual Mesh Gradient Reconstruction (DMGR),
  ESAIM: Mathematical Modelling and Numerical Analysis, 48, pp 583-602 (2014).
- C. Berthon, V. Desveaux,
  An entropy preserving MOOD scheme for the Euler equations,
  IJFV International Journal On Finite Volumes, 11, pp. 1-39 (2014).
- V. Desveaux, M. Zenk, C. Berthon, C. Klingenberg,
  Well-balanced schemes to capture non-explicit steady states: Ripa model,
  to appear in Mathematics of Computation.

Peer-reviewed proceedings

- C. Berthon, Y. Coudière, V. Desveaux,
  Development of DDFV methods for the Euler equations,
  Finite Volumes for Complex Application VI, Springer Proceedings in Mathematics 4, pp. 117-124, 2011
- V. Desveaux, M. Zenk, C. Berthon, C. Klingenberg,
  A well-balanced scheme for the Euler equations with a gravitational potential,
  Finite Volumes for Complex Applications VII-Methods and Theoretical Aspects, Springer Proceedings in Mathematics & Statistics Volume 77, pp. 217-226, 2014.

Submitted papers

- V. Desveaux, M. Zenk, C. Berthon, C. Klingenberg,
  Well-balanced schemes to capture non-explicit steady states in the Euler equations with gravity.

Communications

Talks in national or international conferences

July 2014 **Workshop of Astrophysics**, *Würzburg (Germany)*.

March 2014 **Journées Jeunes EDPistes Français**, *Fréjus (France)*.

September 2013 **3rd Numerical Approximations of Hyperbolic Systems with Source Terms and Applications**, *Aachen (Germany)*.

June 2012 **14th International Conference on Hyperbolic Problems: Theory, Numerics, Applications**, *Padova (Italy)*.

September 2011 **Workshop on Discretization methods for fluid flows**, *Marseille (France)*.

July 2011 **Journées du GDR Calcul**, *Paris (France)*.

Invitations in seminars

February 2015 **Seminar of applied analysis**, *Amiens (France)*.

November 2014 **Seminar of applied Mathematics**, *Bordeaux (France)*.

July 2014 **Seminar of applied Mathematics**, *Würzburg (Germany)*.

Janvier 2014 **Seminar Numerical Analysis - PDE**, *Lille (France)*.

Janvier 2014 **Seminar of the team MIP**, *Toulouse (France)*.

December 2013 **Seminar of LRC Manon**, *Paris (France)*.

November 2013 **Seminar, Maison de la Simulation**, *Saclay (France)*.

May 2013 **PhD student seminar**, *Nantes (France)*.

December 2012 **Seminar of applied Mathematics**, *Würzburg (Germany)*.

October 2012 **Seminar of applied Mathematics**, *Universidade do Minho, Braga (Portugal)*.

May 2011 **PhD student seminar**, *Nantes (France)*.

Posters

April 2012 **PhD student day**, *Nantes (France)*.

September 2011 **2nd Numerical Approximations of Hyperbolic Systems with Source Terms and Applications**, *Roscoff (France)*.

June 2011 **International Symposium on Finite Volumes for Complex Applications**, *Prague (Czech Republic)*.

Teaching activities

2011–2012 **Differential and integral calculus**, First-year students (28h).

2010–2011 **Probability and statistics**, First-year students (28h).

2010–2012 **Numerical Analysis**, Third-year students (40h each year).

2007–2008 **Mathematics examiner in preparatory school**, *Lycée du Parc*, Lyon.

Other activities

2011–2012 **PhD representative on the board of the Laboratory**, *Nantes University*.

2011 **Preparation and animation of the Science Festival (Fête de la Science)**, *Nantes*.

Specific Skills

Computer **Computer languages**.
C, Fortran, Python

Parallel computing.
MPI, OpenMP

Scientific Softwares.
Matlab, Scilab, Maple, FreeFem++

Languages **French**, Native.

English, Fluent.