

Curriculum Vitae

Personal Information

Last Name : **SADAKA**

First Name : **Georges**

Date of birth : April 25, 1983

Nationality : French

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Professional address : 33, rue Saints Leu (LAMFA), 80039 Amiens - France

Position currently held : Research associate, Université de Picardie Jules Verne - France.



Education

September 2014 to now : Research associate at LAMFA, Université de Picardie Jules Verne - France.

September 2013 to August 2014 : Postdoc at LMAC - Université Technologique de Compiègne.

October 2012 to June 2013 : Postdoc at MAP5 - Université Paris Descartes - Paris.

October 2011 to August 2012 : ATER full-time at UPJV - Amiens.

October 2008 to November 2011 : PhD student in Applied Mathematics at UPJV - Amiens under supervision of **Jean-Paul CHEHAB**.

September 2007 to June 2008 : Master Degree (M2) in Applied Mathematics, Université des sciences et technologies de Lille - France.

September 2002 to June 2007 : License (L1-L2-L3) and Master (M1) in Pure Mathematics, Université Libanaise Faculté des Sciences II - Fanar - Liban.

1 Scientific activities

1.1 Keywords

Modeling, scientific computing, numerical analysis with applications to the following themes :

- Tsunami waves modeling.
- Allen-Cahn, Cahn-Hilliard and Caginalp system.
- Fluid structure interaction and blood flow modeling (Postdoc).
- Identification of metabolic fluxes from data tagging isotope carbon-13 (Postdoc).
- Parallel computing for the Shallow Water equations (Cemracs 2012).
- Hydro-sedimentary modeling (Cemracs 2011).

- Modeling of plasma in a Tokamak (Cemracs 2010).
- damped hydrodynamic waves KdV and Boussinesq (thesis).

1.2 Publications

1. G. SADAKA : Solution of 2D Boussinesq systems with FreeFem++ : the flat bottom case, JNM, Vol. 20, 303-324, March 2013.
2. J-P. CHEHAB and G. SADAKA : Numerical study of a family of dissipative KdV equations, CPAA, Issue 1, 519-546, January 2013.
3. J-P. CHEHAB and G. SADAKA : On Damping Rates of dissipative KdV equations, DCDS-S, Vol. 6, No. 6, December 2013
4. E. DERIAZ, B. DESPRÉS, G. FACCANONI, K. GOSTAF, L-M. IMBERT-GERARD, G. SADAKA and R. SART : Magnetic Equations with FreeFem++ : The Grad-Shavranov equation & the current hole. ESAIM : Proceedings, October 2011, Vol. 32, p. 76-94.
5. E. AUDUSSE, C. CHALONS, O. DELESTRE, J. GIESSELMANN, N. GOUTAL, M. JODEAU, G. SADAKA and J. SAINTE-MARIE : Sediment transport modelling : Relaxation schemes for Saint-Venant – Exner and three layer models. ESAIM : Proceedings, 2012, Vol. 38, pp. 78-98.
6. S. CORDIER, H. COULON, O. DELESTRE, C. LAGUERRE, M. HOANG LE, D. PIERRE and G. SADAKA : FullSWOF_Paral : Comparison of two parallelization strategies (MPI and SKELGIS) on a software designed for hydrology applications. ESAIM : Proceedings, December 2013, Vol. 43, p. 59-79.
7. S. MOTTELET, G. GAULLIER and G. SADAKA : Metabolic flux analysis in isotope labeling experiments using the adjoint approach. IEEE/ACM transactions on computational biology and bioinformatics, March 2017, Vol. 14 - 2, p491-497.
8. A. MAKKI, A. MIRANVILLE and G.SADAKA : On the nonconserved Caginalp phase-field system based on Maxwell-Cattaneo law with two temperatures and logarithmic potentials. DCDS-Journal, to appear 2018

1.3 Articles in preparation

1. G. SADAKA : Generation and propagation of a *Tsunami* wave : a new domain adaptation technique, submitted to Ocean modeling 2018.
2. G. SADAKA : Solving Shallow Water flows in 2D with FreeFem++ on structured mesh.

3. F. HECHT, P. JOLIVET and G. SADAKA : Freevol++ 2D Finite volume solver inside FreeFem++.
4. A. MAKKI, A. MIRANVILLE and G.SADAKA : On the conserved Caginalp phase-field system with logarithmic potentials based on the Maxwell-Cattaneo law and with two temperatures.
5. H. ABOUD and G. SADAKA : On fully discrete Finite Two-grid first order finite element scheme for the fully discrete equations of motion of Kelvin-Voigt fluids.
6. M. O. DOMINGUES, M. K. KAIBARA, O. MENDES, G. SADAKA, A. OJEDA. On Grad-Shafranov equation regularization : numerical aspects.

1.4 Delivered talks

Local delivered talks

- Séminaire d'Analyse Appliquée - LMAC - Compiègne : 15/10/13.
- Groupe de travail des thésards et jeunes docteurs au MAP5 - Paris : 11/12/12.
- Groupe de travail "modélisation et méthodes numériques" - LAMFA - Amiens : 18/11/11.
- Journée de la Recherche à l'UPJV - Amiens : 17/02/11.
- Séminaire d'Analyse Appliquée - LAMFA - Amiens : 14/11/11.
- Groupe de travail GTA3 - LAMFA - Amiens : 5/10/09, 14/02/11, 28/02/11, 7/11/11.
- Séminaire doctorant - LAMFA - Amiens : 18/12/09, 10/02/11.

External delivered talks

- CANUM 2018 - Cap d'Agde - Hérault : 29/05/2018.
- The Ninth tutorial and workshop on FreeFem++ at UPMC - Paris : 15/12/17.
- The eight IMACS international conference on nonlinear evolution equations and wave phenomena : computation and theory. University of Georgia, Athens - USA : 25/03/2013.
- CIMPA School - USB - Caracas : 20/04/12.
- Séminaire d'EDP l'IRMA - Strasbourg : 14/02/12.
- Groupe de travail numérique à Orsay : 10/01/12.
- Séminaire d'Analyse Appliquée, LAGA-Paris 13 : 9/12/11.
- The third tutorial and workshop on FreeFem++ at UPMC - Paris : 6/12/11.
- Séminaire des doctorants à l'USTL - Lille : 2/12/10.
- The second tutorial and Workshop on FreeFem++ at UPMC - Paris : 2/09/10.
- 10^{ème} colloque Franco-Roumain de Mathématiques Appliquées - Poitiers : 26/08/10.

2 Teaching and professional experiences

2.1 Training

- 14-15 December 2017 : Tutoriel de base dans FreeFem++. The Ninth tutorial and Workshop on FreeFem++ at UPMC - Paris.
- 10-12 December 2013 : Tutoriel de base dans FreeFem++. The fifth tutorial and Workshop on FreeFem++ at UPMC - Paris.
- 10-14 June 2013 : Cours d'initiation à FreeFem++. Sidi Bel Abbès - Algérie.
- 13-17 January 2013 : Cours d'initiation à FreeFem++, Groupe Calculs du CNRS. Tipaza - Algérie.
- 6-7 December 2012 : Tutoriel de base dans FreeFem++. The fourth tutorial and Workshop on FreeFem++ at UPMC - Paris.
- 16-27 April 2012 : Formation FreeFem++ à l'école CIMPA - Caracas.

2.2 Teaching

- 2011-2012 : ATER full-time (176h/year) at Université de Picardie Jule Vernes.
- 2008-2011 : Monitor (64h/year) at Université de Picardie Jule Vernes.

2.3 Professional experiences

- 2010-2011 : Organizer of scientific meetings for doctoral students in mathematics.
- 2010-2011 : Responsible for organizing the seminar of doctoral students in LAMFA - Amiens.
- 2009-2011 : Representative of PhD students at the Council of the Laboratory LAMFA - Amiens.

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3 prizes and awards

- Thesis price 2012 of the UPJV university : 25 May 2012.

4 Computer skills

- Operating Systems : Linux, MacOS, Windows.
- Programming languages : C, C++, Fortran.
- Software : FreeFem++, Getfem++, Maple, Mathématique, Matlab, Scilab, Simula+.

5 Language skills and leisure

- Arabic (native language), English (excellent), French (excellent).
- Cooking Chief, Ping-Pong.