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Nationality : French
Born : 18/04/1981

Applied mathematics, modeling in Biology and Medecine

Current Position

From september 2013: graduate assistant(IPB & University of Bordeaux)

Education and Diplomas

Dec, 2013: Université Bordeaux Segalen

PhD of applied mathematics and scientific computing.

Title : mathematical modeling of the electrical activity of the atria and pulmonary veins.

Phd supervisor : Yves Coudière et Jacques Henry .

Jury : A.Iollo (President), JF.Gerbeau (Reporter), A.Panfilov (Reporter), O.Dössel, M.Haïssaguerre, M.Saad, Y.Coudière, J.Henry.

Keywords: Applied mathematics, finite element method solver, asymptotic analysis, bilayer model of the atria and pulmonary veins, non linear homogenization.

May, 2013: Ministère de l'Education Nationale

Agrégation de mathématiques (concours interne). National competitive examination for Secondary and University Professors.

Sept. 2008 – June 2010 : Université Pierre et Marie Curie (Paris 6)

(cohabilitation Univ. Paris Nord – ENPC – ENS – Ecole Polytechnique)

Master of Applied Mathematics: Numerical Analysis and PDEs.

Internship: Reaction diffusion equation with Allee's effect applied to population dynamics: geometry influence.

Supervisors: Jean-Michel Roquejoffre and Henry Berestycki.

Sept 2003-Sept 2005 : Institut Universitaire de Formation des Maîtres

Competitive Examination of Primary School Teacher, initial formation.

Sept 2000- Juin 2003 : Université Bordeaux I - Universitat Autònoma de Barcelona

Maîtrise of pure Mathematics (Erasmus exchange)

Publications

Thesis :

- Modélisation de l'activité électrique des oreillettes et des veines pulmonaires.

Journal:

- An Asymptotic Two-Layers Monodomain Model Of Cardiac Electrophysiology In The Atria. *Y.Coudière et al.* Sousmis.
- A bilayer model of human atria: mathematical background, construction and assessment. *S.Labarthe et al.* En préparation.

Proceedings:

- CINC 2013, Zaragoza, Espagne. Influence Of Transmural Slow-Conduction Zones On Long-Time Behaviour Of Atrial Arrhythmia. A Numerical Study With a Human Bilayer Atrial Model. *S.Labarthe et al.*
- EMBC 2013, Osaka, Japon. A bilayer representation of the human atria. *E.Vigmond et al.*
- FIMH 2013, London, UK. A Computational Bilayer Surface Model of Human Atria. *S.Labarthe et al.*

- CINC 2012, Krakow, Poland. A Semi-Automatic Method To Construct Atrial Fibre Structures: a Tool for Atrial Simulations. S. Labarthe *et al.*
- CINC 2012, Krakow, Poland. From Body Surface Potential to Activation Maps on the Atria: a Machine Learning Technique. Nejib Zemzemi *et al.*
- CINC 2012, Krakow, Poland. Global and Directional Activation Maps for Cardiac Mapping in Electrophysiology. Rémi Dubois *et al.*

Communications

Posters:

- Workshop Liryc, 10/2013, Pessac.
- Computing in Cardiology, 09/2012, Krakow, Poland.
- Mayneord Phillips Summer School Cardiac Imaging & Modelling, 07/2012, Oxford, UK.
- National congress of numerical analysis (CANUM 2012), 05/2012, Super Besse.
- National congress of cardiology « Printemps de la Cardiologie », 04/2012, Bordeaux.
- symposium "AF: Clinical challenges for biophysical modelling". 06/2013, London .
- Journée PlaFrim. 04/2013 ,LABRI.
- Print. de la Cardiologie, 04/2013, Marseille.
- Séminaire Etudiant. LMAP. 02/2013. Pau.
- Journal Club IHU Liryc, 01/2013. Bordeaux.
- Summer School on Cardiac Imaging & Modelling. 07/2012, Oxford, UK.
- Print. de la Cardiologie, 04/2012, Bordeaux.
- Séminaire IHU Liryc, 04/2012, Bordeaux.
- Séminaire Etudiant, IMB, 01/2012, Bordeaux.

Presentations:

- PhD defense, 12/2013, Talence.
- CINC 2013, 09/2013, Zaragoza, Espagne.
- EMBC 2013, 07/2013, Osaka, Japon.
- FIMH 2013, 06/2013, London, UK.

Other:

- Forum Emploi Maths, « Témoignages : métiers du secteur santé », 01/2013, Paris.
- Unithé ou Café – Inria Bordeaux, scientific diffusion, 06/2012, Bordeaux.

Teaching Experience

- **Enseirb-Matmeca, IPB, Bordeaux, 2013.** teaching assistant: scientific computing in Fortran 90 (96h)
- **IUT HSE, Bordeaux 1, Talence, 2012-2013.** Teaching assistant : Probability and statistic, introduction to databases (OpenBase). (128h)
- **Primary schools, Ministère de l'Education Nationale.** 2004-2010. Primary teacher (full time)

Awards:

- Poster award, CANUM 2012.
- Poster award, "Printemps de la Cardiologie" 2012.
- Thesis award Thes'AQT of the Region Aquitaine, section "Health and welfare", 2013.

Other Formations

- **MPI, IDRIS, Orsay, 10/2012.** Parallel computing: MPI
- **Modelling: principles, methods and clinical interest.**
- **Mayneord Phillips Summer School 2012, Oxford, UK. 07/2012.** Cardiac Imaging & Simulation, 11/2011. Direct and iterative methods, (partial pivoting, graph partitioning, Krylov's methods...), solvers.

Computer skills

- Scientific calcul : Matlab, Scilab, Maple.
- Programming : fortran, C, C#, python.
- Microsoft Office, LibreOffice, Latex.
- OS : Windows, Linux.