Vuk Milišić

Contact Information

Laboratoire Analyse, Géométrie et Applications (LAGA)
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Citizenship French

Birth June 13, 1973 in Toulouse (France)

Family situation Under PACS since July 2008,
a son born October 26, 2004 in Paris

Research Interests fluid mechanics, roughness, asymptotic analysis, elliptic or parabolic systems, finite elements methods, blood flow in stented arteries
cell motility, lamelopodidum,
discrete kinetic approximations, finite differences, high-order entropic schemes

Education

Université Bordeaux I, France

PhD in Applied Mathematics,
at Institut de Mathématiques de Bordeaux, **December 11, 2001**

- Thesis Topic: Discrete kinetic approximation for initial boundary conservation laws
- Advisor:
  - Professor Bernard Hanouzet
  - MdC Denise Aregba
- Area of Study: Conservation Laws
- Stay of 18 month at IAC CNR Rome,
  - Advisor: Dir. Research. Roberto Natalini (CNR Italy)

Master Degree, Institut de Mathématiques de Bordeaux, june 1997

- specialization in applied mathematics

Academic Experience

Centre National de la Recherche Scientifique (CNRS), France

Position: *1st class CNRS full researcher*
Section 44: Modeling of biological systems, bioinformatics
June 2005 to present

- At Laboratoire Jean Kuntzmann, UMR 5524, Grenoble (France)
  June 2005 to August 2008
- On secondment in Wolfgang Pauli Institute, UMI 2842, Vienna (Austria)
  September 2008 to September 2010

Post-doctoral studies **March 2002 to June 2005**

- LJK MAD/EDP
  September 2004 to June 2005

- Topic: Modelling and simulation of the Heart Contraction
  - Development of a 3D code for non-linear elasticity in great deformation
  - Homogenized constitutive equations for the heart ventricles
- Collaboration with
  Prof. Annie Raoult (MAP5, Paris)
  Prof. Denis Caillerie (L3SR, Grenoble)

- EPFL CMCS
  September 2002 to September 2004
  - Collaboration with
    Prof. Alfio Quarteroni
    C.R. Miguel Angel Fernandez
  - Topic: Geometric multi-scale modelling of the cardio-vascular circulation

Teaching Assistant **October 2001 to September 2002**

- Attaché temporaire de la recherche (ATER) University Bordeaux I

Industrial contracts & Grants

- Contract with Cardiatis a company designing and commercializing artero-vascular prostheses.
  - since March 2006
  - total amount of the contract: 25 000 €

- Grant of the Institut des Systèmes Complexes that federates various research fields around complex systems.
  - since October 2007
  - total amount of the grant: 2 000 €

Publications

- V. Milisic

  Discrete Kinetic Approximation of Initial Value Problems For Conservation Laws PhD Thesis (105 pages) written in french

- V. Milisic

  Stability and convergence of discrete kinetic approximations to an initial-boundary value problem for conservation laws Proc. Amer. Math. Soc. 131 (2003), no. 6, 1727–1737 ps

- D. Aregba-Driollet and V. Milisic

  Kinetic approximation of a boundary value problem for conservation laws Numerische Mathematik 2004, vol. 97, no4, pp. 595-633 pdf

- F. Guarguaglini, V. Milisic and A. Terracina

  A discrete kinetic approximation for a strongly degenerate parabolic problems with boundary conditions J. Differential Equations 202 (2004), no. 2, 183–207. ps

- M. Fernandez, V. Milisic and A. Quarteroni

  Analysis of a geometrical multiscale blood flow model based on the coupling of ODE's and hyperbolic PDE's SIAM Multiscale Model. Simul. 4 (2005), no. 1, 215–236 (electronic) ps

- V. Milisic and A. Quarteroni

  Analysis of lumped parameter models for blood flow simulations and their relation with 1D models M2AN Math. Model. Numer. Anal. 38 (2004), no. 4, 613–632 pdf

- A.F. Corno, P. Fridez, P. Zunino, V. Milisic, M. Prosi, M. A. Quarteroni, and L.K. Segesser,

  Uncompromised pulmonary artery growth despite banding: clinical validation of a computational research abstract submitted to European Journal of Cardio-Thoracic Surgery

- D. Bresch and V. Milisic,

  High order multi-scale wall-laws, part I : the periodic case

  accepted for publication in Quat. Appl. Math. pdf

- D. Bresch and V. Milisic,

  Towards implicit multi-scale wall laws

  C. R. Math. Acad. Sci. Paris 346 (2008), no. 15-16, pdf

- P.S. Jouk and A. Mourad and V. Milisic and G. Michalowicz and A. Raoult and D. Caillerie and Y. Usson

  Analysis of the fibre architecture of the heart by quantitative polarized light microscopy: Accuracy, limitations and contribution to the study of the fibre architecture of the ventricles during fetal and neonatal life.

  European Journal of Cardio-Thoracic Surgery, vol: 31(2007), pp: 916-922pdf

- D. Caillerie and V. Milisic and A. Mourad and A. Raoult

  Modelling and simulation of fibrous biological tissues via discrete homogenization methods

  PAMM Volume 7, Issue 1, Date: December 2007, Pages: 1121601-1121602 pdf

- E. Bonnetier and D. Bresch and V. Milisic,

  A priori convergence estimates for a rough Poisson-Dirichlet problem with natural vertical boundary conditions

  Accepted for publication in Advances in Matematical Fluid Mecanics (2008) pdf

- V. Milisic,

  Very weak estimates for a rough Poisson-Dirichlet problem with natural vertical boundary conditions

  Methods and Applications of Analysis Vol. 16 No. 2, 2009 pdf

- V. Milisic,

  Blood-flow modelling along and trough a braided multi-layer metallic stent submitted (2009) HAL

- V. Milisic and D. Oelz

  On the asymptotic regime of a model for friction mediated by transient elastic linkages. accepted for publication in Journal de Mathematiques Pures et Appliquées, (9) 96 (2011), no. 5, p. 484–501.

- V. Milisic and D. Oelz

  On a structured model for the load dependent reaction kinetics of transient elastic linkages SIAM J. Math. Anal. 47 (2015), no. 3, 2104–2121. pdf

- V. Milisic and G. Wainrib

  Mathematical modeling of lymphocytes selection in the germinal center submitted (2015) pdf

- V. Milisic and D. Oelz

  Tear-off versus global existence for a structured model of adhesion mediated by transient elastic linkages preprint submitted pdf

Languages

- French: mother tongue
- Serbian: mother tongue
- English: fluent
- Italian: fluent

  1999-2000: course of italian at "Universita populare di Roma" level CILS B2
- German: read, written, and spoken

  2008-2009: Sprachkurs, level M1/M2 at Universität Wien (Austria)