



Seventh International Conference on Multiscale Modelling and Methods: Upscaling in Engineering and Medicine

Santiago, Chile, January 16-17, 2017

Program

Venue: Room B112, Beauchef 851

Monday, January 16

8:45 Opening

9:00-9:25 Eric Canon (joint work with Michel Lenczner), Models of thin composite piezoelectric plates

9:30-9:55 Laetitia Paoli, Asymptotic analysis of a micropolar thin film flow with rough boundary and Tresca fluid-solid interface law

10:00-10:25 Sergio Gutiérrez, The small amplitude homogenization method for optimal design

10:30-11:00 coffee break

11:00-11:25 Marie-Claude Viallon, Domain decomposition methods in a geometrical multi-scale domain using finite volume schemes.

11:30-11:55 Carlos Jerez Hanckes (joint work with Fernando Henríquez) Boundary integral formulation and semi-implicit scheme for modeling packed cells under electrical stimulation

12:00-14:00 lunch (Restaurant MLVL, Vergara 723)

14:00-14:25 Carlos Conca, Determining the distribution of ion channels from experimental data using the Mellin transform

14:30-14:55 Joaquin Mura,
A reduced model to detect low contrast inclusions in poroelastic media

15:00-15:25 Frédéric Chardard (joint work Éric Canon, Grigory Panasenko and Olga Stikonene) Numerical scheme for the equation on the graph for a flow in a tube structure

15:30-16:00 coffee break

16:00-16:25 Antoine Rousseau, Schwarz waveform relaxation method for river hydraulics and coastal oceanography

16:30-16:55 Diego Paredes, (joint work with R. Araya, F. Valentin and C. Harder), Multiscale hybrid-mixed methods

17:00-17:25 Duvan Henao, Fracture by void growth and coalescence

Tuesday, January 17

9:00-9:25 Alexander V.Panfilov, Role of small size ionic and conduction heterogeneities in the onset and dynamics of cardiac arrhythmias.

9:30-9:55 Leonel Medina (joint work with Warren Grill), Model quantification of axon responses to kilohertz-frequency spinal cord stimulation for the treatment of chronic pain

10:00-10:25 Vitaly Volpert, Nonlinear dynamics of infection spreading in tissues

10:30-11:00 coffee break

11:00-11:25 Stéphane Avril, Rupture risk estimation in thoracic aortic aneurysms

11:30-11:55 Carlos Andrade, Spatial patterns and frequency distributions of regional deformation in the healthy human lung

12:00-14:00 lunch (Restaurant MLVL, Vergara 723)

14:00-14:25 Jean Clairambault,

An evolutionary perspective on cancer, with applications to anticancer drug resistance modeling and perspectives in therapeutic control

14:30-14:55 Ignacio Espinoza, *In silico* radiobiological models and applications in radiotherapy

15:00-15:25 Patricio Cumsille, (joint work with Guillaume Lefebvre, Francois Cornelis, Thierry Colin, Clair Poignard and Olivier Saut)
Spatial modelling of tumour drug resistance: the case of GIST liver metastases

15:30-16:00 coffee break

16:00-16:25 Juan F. Vivanco, Characterization of multiscale material properties of bioceramic bone scaffolds

16:30-16:55 Grigory Panasenko (joint work with Cristobal Bertoglio, Carlos Conca and K.Pileckas), Junction of models of different dimension for flows in tube structures: interface conditions involving pressure

17:00 Closure and cocktail (CMM, 7th floor, Northern Building).

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