



# Interdisciplinary Symposium on Signals & Systems for Medical Applications



June 3-4, 2013. Institut Henri Poincaré, Paris, France

We are pleased to announce the Interdisciplinary Symposium on Signals and Systems for Medical Applications (ISSMA 2013) to be held in the *quartier latin* of Paris on June 3-4, 2013. This symposium aims at presenting recent advances in control engineering, signal processing and electromagnetism for medical applications. It will focus on three application domains, each constituting a workshop of the symposium:

- Workshop on feedback and synchronization in neuroscience
- Workshop on modeling and analysis of cancer cell dynamics
- Workshop on medical imaging.

Each workshop is made of four independent invited sessions and a poster session.

## Plenary talks

- **François Delhommeau** (UPMC - INSERM, France): "*Phylogeny of the malignant clone in leukemia*"
- **Michel Defrise** (Univ. Libre Bruxelles, Belgium): "*Simultaneous estimation of attenuation and activity in time-of-flight positron tomography: a non-linear inverse problem solved using range conditions*"
- **Francis Lévi** (INSERM, France): "*Systems cancer chronotherapys*"
- **Stéphane Palfi** (CEA - H. Mondor hospital, France): "*Prospect and project of Deep Brain Stimulation for neuro-psychiatric disorders*".

Website / registration / abstract submission:  
<http://issma2013.sciencesconf.org/>

Abstract submission deadline:  
March 15, 2013

Contact: [issma2013@sciensesconf.org](mailto:issma2013@sciensesconf.org)

### Workshop on feedback and synchronization in neuroscience

Session 1.1: From neurons to neuronal  
populations dynamics

Session 1.2: Healthy and pathological  
oscillations in basal ganglia

Session 1.3:  
Synchronization in neuroscience

Session 1.4: Identification and observer  
design in neuroscience

### Workshop on modeling and analysis of cancer cell dynamics

Session 2.1: Cancer modelling with new  
insight on therapeutics

Session 2.2:  
Modeling of acute myeloid leukemia

Session 2.3:  
Cell cycle and clock modeling for cancer 1

Session 2.4:  
Cell cycle and clock modeling for cancer 2

### Workshop on medical imaging

Session 3.1:  
Computed tomography

Session 3.2:  
Positron emission tomography

Session 3.3:  
Multimodality and Compton scattering

Session 3.4:  
Microwave imaging







## June 3-4, 2013. Institut Henri Poincaré, Paris, France

We are pleased to announce the workshop « Feedback and Synchronization in Neuroscience » as a part of the Interdisciplinary Symposium on Signals and Systems for Medical Applications (ISSMA 2013). This workshop aims at gathering expertise from different disciplines (neuroscience, control theory, and medicine) around four sessions. It will take place at Institut Henri Poincaré (Paris) on June 3-4, 2013 in parallel with:

- Workshop on modeling and analysis of cancer cell dynamics
- Workshop on medical imaging.

The workshop is made of four invited sessions and a poster session. Contributions to the poster session should be submitted as an abstract through the workshop website before March 15, 2013.

### Four Invited Sessions

#### Session 1.1

From neurons to neuronal populations dynamics

#### Session 1.2

Healthy and pathological oscillations in basal ganglia

#### Session 1.3

Synchronization in neuroscience

#### Session 1.4

Identification and observer design in neuroscience

Website / registration / abstract submission:

<http://issma2013.sciencesconf.org/>

### Confirmed Speakers

- **Rafal Bogacz** – Univ. Bristol (UK)
- **Thomas Boraud** – CNRS, Univ. Bordeaux (France)
- **Guillaume Drion**, Univ. Liège (Belgium)
- **Constance Hammond** – INSERM, INMED (France)
- **Boris Gutkin** – ENS Paris (France)
- **Henk Nijmeijer** – TUE (the Netherlands)
- **Stéphane Palfi** – CEA, Henri Mondor Hospital (France)
- **Elena Panteley** – CNRS, L2S (France)
- **William Pasillas-Lépine** – CNRS, L2S (France)
- **Romain Postoyan** – CNRS, CRAN (France)
- **Michael Rosenblum** – Univ. Potsdam (Germany)
- **Alex Roxin** – CRM (Spain)
- **Sridevi V. Sarma**, Univ. John Hopkins (USA)

#### Organizers:

- Antoine Chaillet (Univ. Paris Sud - Supélec, L2S)
- Elena Panteley (CNRS, L2S)
- William Pasillas-Lépine (CNRS, L2S)

Contact: [issma2013@sciencesconf.org](mailto:issma2013@sciencesconf.org)





## June 3-4, 2013. Institut Henri Poincaré, Paris, France

We are pleased to announce the workshop « Feedback and Synchronization in Neuroscience » as a part of the Interdisciplinary Symposium on Signals and Systems for Medical Applications (ISSMA 2013). This workshop aims at gathering expertise from different disciplines (control theory, signal and image processing, data mining and knowledge extraction, biology and medicine) around four sessions. It will take place at Institut Henri Poincaré (Paris) on June 3-4, 2013 in parallel with:

- Workshop on feedback and synchronization in neuroscience
- Workshop on medical imaging.

The workshop is made of four invited sessions and a poster session. Contributions to the poster session should be submitted as an abstract through the workshop website before March 15, 2013.

Website / registration / abstract submission:

<http://issma2013.sciencesconf.org/>

### Four invited sessions

#### Session 2.1

Cancer modeling with new insight on therapeutics

#### Session 2.2

Modeling of acute myeloid leukemia

#### Session 2.3

Cell cycle and clock modeling for cancer 1

#### Session 2.4

Cell cycle and clock modeling for cancer 2

### Confirmed speakers

- **Mostafa Adimy** – INRIA (France)
- **Jean Clairambault** – INRIA (France)
- **Franck Delaunay** – IBV, Univ. Nice (France)
- **François Delhommeau** – UPMC, INSERM (France)
- **François Fages** – INRIA (France)
- **Claude Gérard** – ULB (Belgium)
- **Albert Goldbeter** – ULB (Belgium)
- **Pierre Hirsch** – St Antoine Hospital (France)
- **Peter Kim** – Univ. Sydney (Australia)
- **Doron Levy** – Univ. Maryland (USA)
- **Francis Lévi** – INSERM (France)
- **Anna Marciniak-Czochra** – Univ. Heidelberg (Germany)
- **Ali Mohammad-Djafari** – L2S, CNRS (France)
- **Hitay Ozbay** – Univ. Bilkent (Turkey)
- **Filippo Tamanini** – Erasmus Univ. Medical Center (NL)
- **Pauline Traynard** – INRIA (France)

### Organizers:

- Catherine Bonnet (INRIA, L2S)
- Ali Mohammad-Djafari (CNRS, L2S)

Contact: [issma2013@sciencesconf.org](mailto:issma2013@sciencesconf.org)





## June 3-4, 2013. Institut Henri Poincaré, Paris, France

We are pleased to announce the workshop « Medical Imaging » as a part of the Interdisciplinary Symposium on Signals and Systems for Medical Applications (ISSMA 2013). This workshop aims at gathering expertise from different types of medical imaging modality (computed tomography, positron emission tomography, microwave imaging, multimodality) around four sessions. It will take place at Institut Henri Poincaré (Paris) on June 3-4, 2013 in parallel with:

- Workshop on modeling and analysis of cancer cell dynamics
- Workshop on feedback and synchronization in neuroscience.

The workshop is made of four invited sessions and a poster session. Contributions to the poster session should be submitted as an abstract through the workshop website before March 15, 2013.

### Four Invited Sessions

Session 3.1  
Computed tomography

Session 3.2  
Positron emission tomography

Session 3.3  
Multimodality and Compton scattering

Session 3.4  
Microwave imaging

Website / registration / abstract submission:

<http://issma2013.sciencesconf.org/>

### Confirmed Speakers

- **Eric Barat** – LIST-CEA (France)
- **Freek Beekman** – TU Delft, MiLabs (NL)
- **Irène Buvat** – IMNC, CNRS (France)
- **Rolf Clackdoyle** – LHC, CNRS (France)
- **Claude Comtat** – SHFJ, CEA (France)
- **Ian Craddock** – Univ. Bristol (UK)
- **Laurent Desbat** – TIMC, UJF Grenoble (France)
- **Michel Defrise** – VUB-Brussel (Belgique)
- **Emmanuel Guillard** – Saint Gobain, CNRS (France)
- **Tommy Henriksson** – Bristol Univ. (UK)
- **Mai Nguyen-Verger** – ETIS, Univ. Cergy (France)
- **Johan Nuyts** – Univ. Leuven (Belgium)
- **Magnus Otterskog** – Univ. Mälardalen (Sweden)
- **Christian Pichot** – LEAT, CNRS, Univ. Nice (France)

#### Organizers:

- Bernard Duchêne (CNRS, L2S)
- Nadine Joachimowicz (Univ. Paris 7, L2S)
- Thomas Rodet (Univ. Paris Sud, L2S)

Contact: [issma2013@sciencesconf.org](mailto:issma2013@sciencesconf.org)