

# Euro Mediterranean Conference on Biomathematics

## Cairo, June 26-28, 2007, French University in Egypt

**\*June 26\***

**9H00**

**H.E. Philippe COSTE**, French Ambassador in Egypt  
**Dr. Hani HILAL**, Minister for Egyptian Higher Education  
**Dr. Tahani Omar**, Chairman of the French University

**9H30-11H00 - Introducing Conferences**

*« For an applied mathematical research in the developing countries? »*

**Mohamed JAOUA**

Chair of UNESCO - Mathematics and Development, Université de Nice, France  
[jaoua@unice.fr](mailto:jaoua@unice.fr)

*« Jacques Louis Lions, a mathematician without frontier »*

**Amy DAHAN-DALMEDICO**

Ecole des Hautes Etudes en Sciences Sociales – EHESS, France  
[Amy.Dahan-Dalmedico@damesme.cnrs.fr](mailto:Amy.Dahan-Dalmedico@damesme.cnrs.fr)

**11H00-11H15 – Coffee Break**

**11H15-12H00 - General Conference I**

*« Mathematical models of stroke »*

**Emmanuel GRENIER**

ENS Lyon, France  
[egrenier@umpa.ens-lyon.fr](mailto:egrenier@umpa.ens-lyon.fr)

**12H00-13H00 Lunch**

**13H00-15H00 - Parallel Session I**

**Mini Symposia I – Cancerous Cells**

*« Improving targeted metal-based drug delivery to cancer cells for cancer therapeutics »*

**Philippe COLLERY**

Polyclinique Maynard, France  
[Philippe.Collery20220@wanadoo.fr](mailto:Philippe.Collery20220@wanadoo.fr)

*« Mathematical modeling of chronic myelogenous leukaemia »*

**Mostafa ADIMY**

Université de Pau, France.  
[Mostafa.Adimy@univ-pau.fr](mailto:Mostafa.Adimy@univ-pau.fr)

*« From macroscopic to microscopic description of multicellular systems and biological growing tissues »*

**Abdel BELLOUQUID**

Université Cadi Ayyad, Maroc.  
[bellouq2002@yahoo.fr](mailto:bellouq2002@yahoo.fr)

*« A 3-D mathematical model for tumor growth »*

**Thierry COLIN**

Université de Bordeaux, France.  
[colin@math.u-bordeaux1.fr](mailto:colin@math.u-bordeaux1.fr)

**Mini Symposia II – Complex Fluids and Biological tissue**

*« A constitutive law for the cardiac tissue and a finite element formulation in the cartesian case »*

**Stéphane GERBI**

Université de Savoie, France  
[Stéphane.Gerbi@univ-savoie.fr](mailto:Stéphane.Gerbi@univ-savoie.fr)

*« Human head injury criteria against impact derived from numerical real world accidents reconstruction »*

**Daniel BAUMGARTNER**

Université Louis Pasteur Strasbourg  
[baumgart@imfs.u-strasbg.fr](mailto:baumgart@imfs.u-strasbg.fr)

*« Space-time analysis of the electrophysiological mechanisms during ventricular fibrillation in the human hearts »*

**Ayman MOURAD**

Université Libanaise, Liban  
[Ayman.mourad@imag.fr](mailto:Ayman.mourad@imag.fr)

## 15H00-15H30 – Coffee Break

### 15H30-18H00 - Parallel Session I

#### Mini Symposia I – Cancerous Cells

« *Migraine with aura* »

**Stéphane DESCOMBES**

ENS Lyon, France.

[Stephane.DESCOMBES@umpa.ens-lyon.fr](mailto:Stephane.DESCOMBES@umpa.ens-lyon.fr)

« *Mathematical modeling of Chemotaxis* »

**Francis FILBET**

Université Claude Bernard Lyon I, France.

[filbet@math.univ-lyon1.fr](mailto:filbet@math.univ-lyon1.fr)

« *Computational problems inherent to numerical modeling in medicine* »

**Violaine LOUVET**

Université Claude Bernard Lyon I, France.

[Louvet@math.univ-lyon1.fr](mailto:Louvet@math.univ-lyon1.fr)

« *On a parabolic system strongly coupled modeling tumor growth* »

**Lila HADJADJ**

USTHB Alger

[hadjadj\\_lila@yahoo.fr](mailto:hadjadj_lila@yahoo.fr)

« *Asymptotic behaviour of state trajectories for a kinetic model of tumour immune system inter.* »

**Bouchra AYLALJ**

IMB UMR 5152 Univ. Bordeaux 1 Projet Anubis

[Bouchra.Aylalj@math.u-bordeaux1.fr](mailto:Bouchra.Aylalj@math.u-bordeaux1.fr)

#### Mini Symposia II – Complex Fluids and Biological tissue

« *Does the collagen network contributes to normal systolic left ventricular wall thickening ? Theoretical and numerical aspects* »

**Christian BOURDARIAS**

Unité mixte 5127 CNRS LAMA, Université de Savoie, France

[Christian.Bourdarias@univ-savoie.fr](mailto:Christian.Bourdarias@univ-savoie.fr)

« *On a variable density magnetic fluid model* »

**El Hassan ESSOUFI**

Université Hassan Premier, Maroc

[essoufi@gmail.com](mailto:essoufi@gmail.com)

« *Newtonian limit for Oldroyd viscoelastic fluids* »

**Raafat TALHOUK**

Université Libanaise, Liban

[rtalhok@ul.edu.lb](mailto:rtalhok@ul.edu.lb)

**\*June 27\***

#### 9H00 - Sanofi-Aventis Group Presentation

**Mosaad Morsi**, [Mosaad.Morsi@sanofi-aventis.com](mailto:Mosaad.Morsi@sanofi-aventis.com)

### 9H30-11H00 - Parallel Session II

#### Mini Symposia III – Stem Cells and Differentiation

« *Mathematical modeling of differentiation and proliferation of hematopoietic stem cells* »

**Mostafa ADIMY**

Université de Pau, France.

[Mostafa.Adimy@univ-pau.fr](mailto:Mostafa.Adimy@univ-pau.fr)

« *Dynamics with multiple attractors in population biology: a tale of weak transverse stability* »

**Bernard CAZELLES**

ENS Paris-Ulm, France

[cazelles@biologie.ens.fr](mailto:cazelles@biologie.ens.fr)

« *Model of branching in a selective system* »

**Stéphane GENIEYS**

Université Claude Bernard Lyon 1

[genieys@math.univ-lyon1.fr](mailto:genieys@math.univ-lyon1.fr)

#### Mini Symposia IV – Hemodynamic and Arteries

« *Recent advances on the geometrical multiscale modelling of the cardiovascular system* »

**Fabio NOBILE**

Mox Politecnico di Milano, Italia

[fabio.nobile@polimi.it](mailto:fabio.nobile@polimi.it)

« *A coupled multidomain method for numerical simulation of blood flow and pressure in deformable arteries* »

**Irène VIGNON-CLEMENTEL**

INRIA Rocquencourt, France

[irene.vignon-clementel@inria.fr](mailto:irene.vignon-clementel@inria.fr)

« *Adaptative coupling of multidimensional models of flows* »

**Daniela CAPATINA**

Université de Pau, France

[daniela.capatina@univ-pau.fr](mailto:daniela.capatina@univ-pau.fr)

### 11H00-11H15 – Coffee Break

### 11H15-12H00 - General Conference II

« *Model reduction methods for simulation of fluid flows in physiological configurations* »

**Yvon MADAY**

Université de Paris VI, France

[maday@ann.jussieu.fr](mailto:maday@ann.jussieu.fr)

### 12H00-13H00 Lunch

### 13H00-13H45 - General Conference III

« *Looking for a Biological-Mathematical Theory for Complex Multicellular Systems* »

**Nicola BELLOMO**

Politecnico di Torino, Italia.

[nicola.bellomo@polito.it](mailto:nicola.bellomo@polito.it)

### 13H45-14H00 – Coffee Break

### 14H00-16H00 - Parallel Session II

#### Mini Symposia III – Stem Cells and Differentiation

« *Stem cells biology and mathematical formalism* »

**Sonia BENHAMIDA**

Ecole Centrale Paris, France

[sonia.benhamida@ecp.fr](mailto:sonia.benhamida@ecp.fr)

« *Contribution to the description of hematopoiesis and application to the leukemia problem* »

**Laurent PUJO-MENJOUET**

Institut Camille Jordan - Université Claude Bernard Lyon 1, France

[pujo@math.univ-lyon1.fr](mailto:pujo@math.univ-lyon1.fr)

« *Modeling and simulation of the interaction between population of cells* »

**Sylvain FOULIARD**

Ecole Centrale Paris, France

[sylvain.fouliard@ecp.fr](mailto:sylvain.fouliard@ecp.fr)

« *Theoretical analysis of a cell differentiation model* »

**Mohamed Tarik TOUAOULA**

Université Abou Bekr Belkaid de Tlemcen, Algeria

[touaoulatarik@yahoo.fr](mailto:touaoulatarik@yahoo.fr)

### 16H00-16H15 – Coffee Break

### 16H15-17H00 - General Conference IV

« *Modeling and numerical issues in fluid-structure interaction problems arising in biomechanics* »

**Georges-Henri COTTET**

Institut Mathématique de Grenoble

[Georges-Henri.Cottet@imag.fr](mailto:Georges-Henri.Cottet@imag.fr)

### 18H30 – FRENCH EMBASSY RECEPTION

#### Mini Symposia IV – Hemodynamic and Arteries

« *Toward high order multiscale wall law for fluid flow : unified approach and recent results* »

**Vuk MILISIC**

Institut de Mathématiques de Grenoble, France

[Vuk.Milic@imag.fr](mailto:Vuk.Milic@imag.fr)

« *The SINUPROS model for human cortical bone and its consequences on flow motion at microscale* »

**Jean-Marie CROLET**

Université de Franche-Comté, France

[jmcrolet@univ-fcomte.fr](mailto:jmcrolet@univ-fcomte.fr)

« *A blood-artery interaction problem* »

**Bernard GIUDICELLI**

Université de Corse, France

[guidi@univ-corse.fr](mailto:guidi@univ-corse.fr)

**\*June 28\***

**9H00-10H30 - Parallel Session III**

**Mini Symposia V – Medical Image Analysis**

« *Toward real time liver motion estimation* »

**Jerome FEHRENBACH**

Université Paul Sabatier, France

[fehren@mip.ups-tlse.fr](mailto:fehren@mip.ups-tlse.fr)

« *Fourier synthesis via duality techniques* »

**Pierre MARECHAL**

Université Paul Sabatier, France

[pr.marechal@gmail.com](mailto:pr.marechal@gmail.com)

« *Riemannian - geometric methods for the processing of diffusion tensor magnetic resonance imaging data of the brain* »

**Maher MOAKHER**

LAMSIN-ENIT, Tunisia

[maher.moakher@enit.rnu.tn](mailto:maher.moakher@enit.rnu.tn)

**10H30 – Coffee Break**

**10H30-12H00 - Parallel Session III**

**Mini Symposia V – Medical Image Analysis**

« *Medical imaging methods based on time reversal* »

**Nabil GMATI**

LAMSIN-ENIT, Tunisia

[Nabil.Gmati@enit.rnu.tn](mailto:Nabil.Gmati@enit.rnu.tn)

« *Spline operator for fitting 3D data on the sphere : Application to medical imaging* »

**Driss SBIBIH**

Université Mohammed 1<sup>er</sup>, Morocco

[sbibih@sciences.univ-oujda.ac.ma](mailto:sbibih@sciences.univ-oujda.ac.ma)

« *Data completion : applications in EEG and in ECG* »

**Amel BEN ABDA and Mohamed JAOUA**

LAMSIN-ENIT, Tunisia

[amel.benabda@enit.rnu.tn](mailto:amel.benabda@enit.rnu.tn)

**Mini Symposia VI – Population Dynamics**

« *Periodic solution of a switched system arising in a dynamic of a population in a fluctuating environment* »

**Nadir SARI**

Université de la Rochelle, France

[nadir.sari@univ-lr.fr](mailto:nadir.sari@univ-lr.fr)

« *Epidemic Curves From Two Geometrical Perspectives: A Brief Introduction* »

**Magd Elias KAHIL**

Modern Sciences and Arts University, Egypt

[kahil@aucegypt.edu](mailto:kahil@aucegypt.edu)

« *Sur un modèle biologique à retard* »

**Aicha CHAOUI**

USTHB, Algeria

[chaoui\\_aicha2000@yahoo.fr](mailto:chaoui_aicha2000@yahoo.fr)

« *Numerical Implementation of Exact and Approximate Controllability for a Problem of Population Dynamics* »

**Tarik ALIZIANE**

USTHB Algeria

[taliziane@usthb.dz](mailto:taliziane@usthb.dz)

**Mini Symposia VII – Numerical Methods for Fluids**

« *Analyse de modeles de shallow water de type bi-couche et a frontiere libre* »

**Mathieu PEYBERNES**

CEA de Bruyères, France

[peybernes@univ-corse.fr](mailto:peybernes@univ-corse.fr)

« *Approximation par la méthode des moindres carrés d'un problème bidimensionnel stationnaire d'interaction fluide-structure* »

**Ibrahima MBAYE**

Université de Haute-Alsace, France

[ibrahima.mbaye@uha.fr](mailto:ibrahima.mbaye@uha.fr)

« *Second order tzo-grid finite element scheme for the fully discrete transient Navier-Stokes equations* »

**Hyam ABOUD et Tony SAYAH**

Université Saint Joseph Lebanon

[tsayah@fs.usj.edu.lb](mailto:tsayah@fs.usj.edu.lb)

« *Perturbation method for linear difference equations with small parameters* »

**Tahia ZERIZER**

Université de Haute Alsace, France

[tzerizer@yahoo.fr](mailto:tzerizer@yahoo.fr)

**12H00-13H00 Lunch**

**13H00-14H30**

**Mini Symposia V – Medical Image Analysis**

*« Spatiotemporal Analysis of Event Related Brain Potentials »*

**Ahmed ADEMOGLU**

Institute of Biomedical Engineering, Bogazici University, Istanbul, Turkey  
[ademoglu@boun.edu.tr](mailto:ademoglu@boun.edu.tr)

*« Model Comparisons in High Angular Resolution Diffusion MRI »*

**Philip BATCHELOR**

University College London, UK  
[philip.batchelor@ucl.ac.uk](mailto:philip.batchelor@ucl.ac.uk)

*« On some EDP's models for the image processing : Application to the medical imagery »*

**Rajae ABOULAICH**

Ecole Mohammadia d'ingénieurs, Morocco  
[aboulaich@emi.ac.ma](mailto:aboulaich@emi.ac.ma)

**14H30-14H45 - Pause**

**14H45-15H30 - General Conference V**

*« Piecewise-linear models of genetic regulatory networks »*

**Tewfik SARI**

Université de Haute-Alsace, France  
Directeur Scientifique Afrique du CIMPA, France.  
[Tewfik.sari@uha.fr](mailto:Tewfik.sari@uha.fr)

**15H30-16H00 - Coffee Break**

**16H00-17H30**

**Mini Symposia V – Medical Image Analysis**

*« Sources localization and approximation of the boundary data, application to EEG problem »*

**Moncef MAJHOUB**

LAMSIN-ENIT, Tunisia  
[moncef.mahjoub@enit.rnu.tn](mailto:moncef.mahjoub@enit.rnu.tn)

*« Level-Set & Adjoint-Based Optimization Methods For Inverse Problems »*

**Frédéric CHANTALAT**

Université de Bordeaux 1, France  
[Frederic.Chantalat@math.u-bordeaux1.fr](mailto:Frederic.Chantalat@math.u-bordeaux1.fr)

*« Image processing by topological asymptotic expansion »*

**Didier AUROUX**

Laboratoire MIP - Université Paul Sabatier, France  
[auroux@mip.ups-tlse.fr](mailto:auroux@mip.ups-tlse.fr)