



# Forum Ter@Tec 2009

June 30 & July 1st, 2009 – Supelec

*Ter@tec'09 Forum sponsored by*



JUNE 30 : PLENARY SESSIONS PROGRAM – AMPHI		
Time	Topics	Speakers
08H30-09H00	Welcome - Exhibition	
09h00-09h10	Opening	<i>Thierry MANDON, Président délégué du Conseil général de l'Essonne</i>
09h10-09h50	HPC, the technological vision of Intel	<i>Herbert CORNELIUS, Director Advanced Computing Center EMEA, INTEL</i>
09h50-10h30	NVIDIA GPU Computing HPC Strategy	<i>Jen-Hsun HUANG – Co-founder, President and Chief Executive Officer, NVIDIA</i>
10h30-11h10	Break Coffee – Exhibition	
11h10-11h50	Advances in Engineering and Scientific Simulation - End-to-End Virtual Prototyping and Super Performance Computing	<i>Alain de ROUVRAY, Président du Conseil d'Administration, ESI Group</i>
11h50-12h30	Le HPC, axe stratégique de développement des progiciels ANSYS	<i>Eric Bienvenu, Regional Vice President, Europe, ANSYS</i>
12h30-14h00	Lunch Buffet – Exhibition	
14h00-14h40	HPC, the point of view of EADS	EADS
14h40-15h10	Applying a Graphical System Design Approach to Enable Real-Time HPC	<i>James TRUCHARD, President and CEO, NATIONAL INSTRUMENTS</i>
15h10-16h00	Break Coffe – Exhibition	
16h00-16h40	Le HPC dans la surveillance de l'environnement	<i>Pierre BEAL, Directeur Général, NUMTECH</i>
16h40-17h10	HPC and the progress of weather and climate forecasting	<i>Philippe BOUGEAU, ECMWF Météo France</i>
17h10-17h30	Bull - Joseph Fourier Prize Ceremony in partnership with GENCI	<i>Didier LAMOUCHE, Président-Directeur Général, BULL Catherine RIVIERE, Président-Directeur Général, GENCI</i>
18H20	Cocktail – Exhibition	

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JULY 1ST – WORKSHOPS PROGRAM				
09h00 -13h00	Workshop 1 HPC AND COMPLEX SYSTEMS DESIGN Part 1	Workshop 2 HPC AND LIFE SCIENCES	Workshop 4 HPC AND RISK EVALUATION	SCILAB TECH '09 THE FIRST SCILAB USERS CONFERENCE Part 1
13h00-14h00	<b>BREAK BUFFET</b>			
14h00 -18h00	Workshop 1 HPC AND COMPLEX SYSTEMS DESIGN Part 2	Workshop 3 HPC, NEW CHALLENGES FOR BIO	Workshop 5 GPU, STATE OF THE ART AND APPLICATIONS	SCILAB TECH '09 THE FIRST SCILAB USERS CONFERENCE Part 2

### **HPC AND COMPLEX SYSTEMS DESIGN**

*Wednesday July 1st 9h00 to 18h00*

*Chairman : Jean-François LAVIGNON, BULL*

- 09h-9h45     **Introduction**  
*Bruno STOUFFLET, DASSAULT AVIATION*
- 09h45-10h30     **Zoom sur la roadmap**  
*Gérard POIRIER, DASSAULT AVIATION*
- 10h30-11h00     Break
- 11h00-11h30     **Architectures logicielles pour machines pétascale**  
*Pascale ROSSE, BULL*
- 11h30-12h00     **Exploitation logicielle du parallélisme**  
*Stéphane BIHAN CAPS ENTREPRISE*
- Chairman : Jacques DUYSENS, C&S*
- 13h30-14h15     **Méthodes et outils pour la conception de systèmes complexes**  
*Dimitri MAVRIS, Georgia Institute of Technology*
- 14h15-14h45     **Réduction de modèles**  
*Gilles FLEURY, SUPELEC*
- 14h45-15h15     **Robustesse et incertitudes**  
*Fabien MANGEANT, EADS*
- 15h15-15h45     Break
- 15h45-16h15     **Méthodes d'optimisation dans le domaine de l'automobile**  
*Armelle LE GALL, EURODECISION*
- 16h15-16h45     **Modélisation et simulations avancées de systèmes complexes**  
*Vincent BRAIBANT, LMS International*
- 16h45-17h00     **Conclusion**

**HPC AND LIFE SCIENCES**  
**Wednesday July 1st - 9h00 to 13h00**

*Chairman : Dr. Marie-Christine SAWLEY  
 CMS Institute for Particle Physics - ETH Zurich*

- 09h00-09h30 **Drug induced effects on the heart: Insights from High Performance Computing simulations**  
*By Dr. Blanca RODRIGUES, Oxford University Computing Laboratory (UK)*
- 09h30-10h00 **Applications and perspectives of HPC in Pharma: the example of Merck Serono**  
*By Dr. Friedrich RIPPmann, Director bio and Chemoinformatics DA, Merck Serono (Germany)*
- 10h00-10h30 **From Diffusion MR Image Analysis to Whole Brain Connectivity Simulation**  
*By Prof. Jean-Philippe THIRAN, Centre d'imagerie biomédicale EPFL (Switzerland)*
- 10h30-11h00 Break
- 11h00-11h30 **Biomolecular Science and Data Intensive Informatics**  
*By Dr. Graham CAMERON, Associate Director European Bioinformatics Institute (Oxford, UK)*
- 11h30-12h00 **From avalanche of biological data to system modeling**  
*By Dr. Ioannis XENARIOS, Director Vital IT (Lausanne, Switzerland)*
- 12h30-13h00 **Role of HPC in medicine**  
*By Dr Arthur THOMAS, CEO Proteus Associates (UK)*

**HPC AND BIO**  
**Wednesday July 1st, 14h00-18h00**

*Chairman : Michel MASELLA  
 Institut de Biologie et de Technologie de Saclay - CEA/Saclay, DSV/iBiTECS/SIMOPRO*

- 14h00-14h45 **MicroScope : une plateforme d'annotation bactérienne**  
*By Claudine MEDIGUE, CNRS UMR8030 & CEA/DSV/IG/Genoscope, Laboratoire de Génomique Comparative*
- 14h45-15h30 **GRISBI : Grid Support for Bioinformatics in France**  
*By Christophe BLANCHET, Pôle Bioinformatique de Lyon IBCP UMR5086 CNRS Institut de Biologie et Chimie des Protéines*
- 15h30-16h00 Pause
- 16h00-16h45 **Grilles en sciences du vivant : résultats et perspectives**  
*By Vincent BRETON, CNRS-IN2P3, Laboratoire de Physique Corpusculaire*
- 16h45-17h30 **Accélérateurs matériels pour le calcul haute performance en bioinformatique**  
*By Dominique LAVENIER, Professeur ENS Cachan, EPI INRIA Symbiose, IRISA, Rennes.*
- 17h30-18h15 **Nouvelles technologies de séquençage et nouvelles questions en bioinformatique**  
*By François ARTIQUENAVE, CEA/DSV/IG/Genoscope, Laboratoire de Bioinformatique et d'Analyse de Séquences*

## **APPORT DU HPC A L'EVALUATION DES RISQUES**

**Wednesday July 1st - 09h00 to 13h00**

*Chairman : Patrick LASCAUX, SMAI*

- 09h00-9h45 **Mitigating seismic and tsunami risk : the contribution of numerical simulation**  
*René CRUSEM, CEA/DAM, DIF/DASE/LDG*
- 09h45-10h30 **Weather prediction uncertainty estimation with ensemble prediction systems**  
*Philippe ARBOGAST, METEO France*
- 10h30-11h00 **Break**
- 11h00-11h45 **Risk, energy and High Performance Computing : recent demonstrations**  
*Etienne DE ROCQUIGNY, EDF*
- 11h45-12h30 **Realistic simulation through HPC computing: Application to Risk at Sea**  
*Argiris KAMOULAKOS, ESI Group*

## **GPU – ETAT DE L'ART ET GRANDS DOMAINES D'APPLICATIONS**

**Wednesday July 1st - 14h00 to 18h00**

*Président de séance : Eric MAHE, WALLIX*

### **GPU: état de l'art**

- 14h00-14h30 **Les GPU: architectures et roadmap**  
*Jean-Christophe BARATAULT, NVIDIA - Jean-François LAVIGNON, BULL*
- 14h30-15h00 **Outils d'aide à la parallélisation: HMPP et le standard OpenCL**  
*François BODIN, CAPS ENTREPRISE*
- 15h00-15h30 **GPU et Open Source**  
*Ronan KERYELL, HPC PROJECTS*
- 15h30-16h00 **GPU et optimisations algorithmiques**  
*Grigori FURSIN, ALCHEMY-INRIA - Basile STARYNKEVITCH, CEA LIST - Emmanuel BUISSON, NUMTECH - Patrick VIRY, ATEJI*
- 16h00-16h30 **Pause**
- Les grands domaines d'applications**
- 16h30-17h00 **Pétrole**  
*Henri CALANDRA, TOTAL*
- 17h00-17h30 **Génomique**  
*Fariza TAHI, Université d'Evry-IBISC - Jean-Michel BATT, INRA*
- 17h30-18h00 **Calcul, simulation, cryptanalyse**  
*Sylvestre LEDRU, SCILAB - Eric LENORMAND, THALES TRT - WALLIX*

## **SCILAB TECH '09 - THE FIRST SCILAB USERS CONFERENCE**

*Wednesday July 1<sup>st</sup> – 9h00 to 18h00*

**A unique opportunity for the Users' Community to meet, exchange and discover the latest technical developments inside and around Scilab.**

Since the creation of the initial Scilab Consortium in 2003, the free numerical computation platform Scilab has been continuously improved.

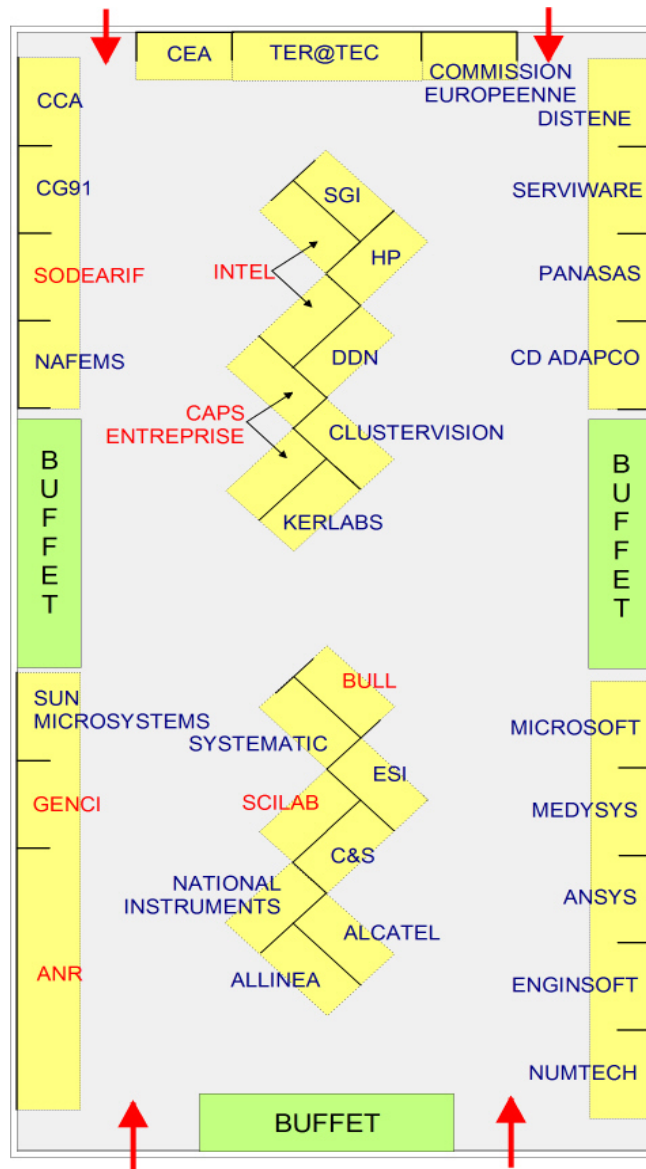
Nowadays, Scilab is used worldwide both in research and education fields as well as in the industry. The conference addresses the latest technological developments both in terms of new functionalities included in the current 5.1 release and in terms of major technical trends for the future releases, with a special emphasis on HPC, multicore and GPU technologies.

Among the highlights of the conference: interoperability with related scientific software, major complementary toolboxes, major features of Scilab 6 (the future native 64 bits release).

- |               |                                                                                                                                                      |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 - 9:00   | <b>Coffee</b>                                                                                                                                        |
| 9:00 - 9:10   | <b>Welcome speech</b><br><i>Claude GOMEZ, Consortium Scilab</i>                                                                                      |
| 9:10 - 9:55   | <b>Keynote: National Mission on Education through ICT: Open Source Software</b><br><i>Kannan MOUGDALYA, IIT Bombay</i>                               |
| 9:55 - 10:40  | <b>Scilab 6: What's new?</b><br><i>Bruno JOFRET, Consortium Scilab</i>                                                                               |
| 10:40 - 11:00 | <b>Coffee break</b>                                                                                                                                  |
| 11:00 - 11:30 | <b>Scilab on Multi-Cores, Clusters &amp; Clouds with ProActive Parallel Suite</b><br><i>Denis CAROMEL, INRIA Sophia Antipolis - Méditerranée</i>     |
| 11:30 - 12:00 | <b>Targeting the Scicos Codegenerator for embedded applications</b><br><i>Roberto BUCHER, University of Applied Sciences of Southern Switzerland</i> |
| 12:00 - 12h30 | <b>Scicos code generation for embedded microcontrollers: examples based on the FLEX boards</b><br><i>Paolo GAI, Evidence</i>                         |
| 12:30 - 14:00 | <b>Lunch</b>                                                                                                                                         |
| 14:00 - 14:30 | <b>Scilab and modeFRONTIER integration: Optimization of a pipe network for water distribution</b><br><i>Andrea PIUSSI, Enginsoft Italy</i>           |
| 14:30 - 15:00 | <b>Grocer: Scilab Toolbox for Econometricians</b><br><i>Eric DUBOIS</i>                                                                              |
| 15:00 - 15:30 | <b>Coffee break</b>                                                                                                                                  |
| 15:30 - 16:00 | <b>Use of SciLab for space mission analysis</b><br><i>Thierry MARTIN, CNES</i>                                                                       |
| 16:00 - 16:30 | <b>GreenScilab: A toolbox simulating plant growth and architecture</b><br><i>Paul-Henry COURNEDE, Ecole Centrale de Paris</i>                        |
| 16:30 - 17:00 | <b>Conclusion</b><br><i>Claude GOMEZ, Consortium Scilab</i>                                                                                          |

**JUNE 30, 2009 EXHIBITION – POLYVALENTE ROOM**

- ALCATEL LUCENT
- ALLINEA SOFTWARE
- **ANR**
- ANSYS
- **BULL**
- **CAPS ENTREPRISE**
- CC DE L'ARPAJONNAIS
- CD ADAPCO
- CEA
- CG DE L'ESSONNE
- CLUSTERVISION
- COMMISSION EUROPEENNE
- COMMUNICATION & SYSTEMES
- DATADIRECT NETWORKS
- DISTENE
- ENGIN SOFT
- ESI GROUP
- **GENCI**
- HP France
- **INTEL**
- KERLABS
- MEDYSYS
- MICROSOFT
- NAFEMS
- NATIONAL INSTRUMENTS
- NUMTECH
- PANASAS
- **SCILAB**
- SERVIWARE
- SGI
- **SODEARIF**
- SUN MICROSYSTEMS
- SYSTEMATIC
- TER@TEC



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