Scientific school at Aussois
SIMUREX

Context & objectives

The SIMUREX scientific school addresses **SIMUlation and EXperimentation of the energy performance of buildings.** Beyond the obvious economic and social importance for this sector, which is the largest consumer of final energy, there are still major scientific challenges that are often poorly or not well known. The human habitat is characterized by extended spatio-temporal scales (10^{-2}m ... 10^{4}m, 1s ... 50 years), and strong multi-physical couplings (heat & mass transfer, with numerous non-linearities). The association between both the physical and the socio-economical aspect results in a particularly complex system. In order to be able to supply a high-quality work, it is important to show this complexity and to be aware of it.

Moreover, to be able to **simulate and verify buildings' energy performance**, taking into account the different levels of complexity, new approaches are needed, for example using data processing algorithms (machine learning, big data) and increased computing capacities. Building energy field is traditionally the meeting place of many communities: applied mathematics, thermal, fluid mechanics, automation, human and social sciences, signal processing, and more recently, data processing. SIMUREX School aims at gathering all those communities.

The main target of the SIMUREX scientific school is to show this inter-disciplinarity in practice, in the aim of increasing the reliability of the energy performance assessment of buildings, either by simulation or by experimental measurements. The complexity of the building object and all the influences that govern its energy performance is an important scientific barrier in itself.

Scientific committee

Monika Woloszyn (school director / LOCIE-INES, Univ. Savoie Mont Blanc), Etienne Wurtz (CEA-INES), Jean-Jacques Roux (CETHIL, Insa Lyon), Laurent Mora (TREFLE-I2M, Univ. Bordeaux), Emmanuel Bozonnet (LASIE, Univ. La Rochelle), Bruno Peuportier (CEP, Mines Paris Tech), Pierre Tittelein (LGCgE, Univ Artois), Stephane Ginestet (LMDC, Insa Toulouse), Alain Bastide (PIMENT, Univ. La Réunion), Stephane Ploix (G-SCOP, INP Grenoble), Daniel Quenard (CSTB) Darren Robinson (University of Sheffield), Nathan Mendes (PUCPR, Brazil), Thierry Duforestel (EDF), Marie-Christine Zelem (CERTOP), Frederic Wurtz (G2Elab, Univ Grenoble)….

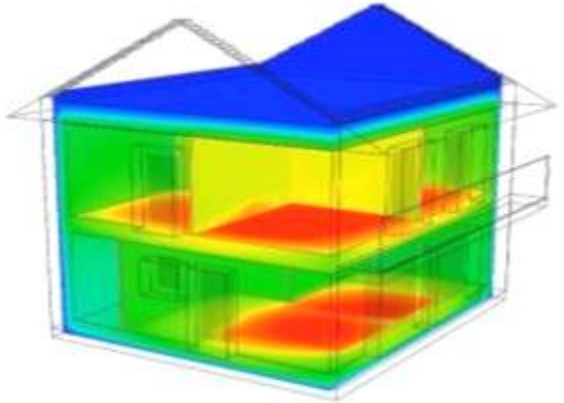
Venue

- Monday 15th october at INES in Le Bourget du Lac
- Acces to Ines:
  - Plane : Geneve and Lyon
  - Train : TGV Station of Chambéry
- Bus transfer to Aussois from Ines the Monday 15th evening until the Friday 19th evening.

From buildings to cities through Simulation and Experimentation

SIMUREX 2018
SCIENTIFIC SCHOOL
15 to 19 october 2018

INES, Le Bourget du Lac, FRANCE
& Aussois, FRANCE



Organised by :

ines
INSTITUT NATIONAL DE L'ENERGIE SOLAIRE
ITE - Institut pour la Transition Énergétique

IBPSA France

UNIVERSITÉ SAVOIE MONT BLANC

cnrs

SIMUREX 2018

Scientific school at Aussois, Savoie, France

Major program themes

- ❑ Coupled heat and mass transfer : modelling and monitoring.
- ❑ Optimization methods and building characterization
- ❑ Data analysis techniques and statistical learning
- ❑ Modelling from the building scale to the city scale
- ❑ The role of human sciences in building sciences

Invited lecturers

Darren Robinson (Univ. of Sheffield, UK)
Nathan Mendes (PUC Parana, B)
Thierry Duforestel (EDF R&D, FR)
Marie-Christine Zelem (CERTOP, Univ. Toulouse JJ, FR)
Frederic Wurtz (G2ELab, Univ . Grenoble Alpes, FR) ….

Organizing committee

Monika Woloszyn (LOCIE), Simon Rouchier (LOCIE), Gilles Fraisse (LOCIE), Anne-Cécile Grillet (LOCIE), Aurélie Foucquier (CEA), Arnaud Jay (CEA), Jeanne Goffart (LOCIE), Julien Berger (LOCIE), Frédéric Wurtz (G2ELAB)

Program structure

For each topic two plenary presentations will be given by international scientists. These plenary sessions will be complemented by 'hands-on' workshops in small groups.
Workshops will be organised in parallel sessions.

Examples of workshops (beginners and advanced level) :
- Uncertainty and sensitivity analysis
- In-situ measurement of building performance,
- Optimisation tools,
- Model reduction methods
- Hygrothermal characterization of materials
- Machine learning
- Solar resources in city levels ….

Expected benefits

- Create a network for scientific collaboration and knowledge exchange,
- Develop new educational projects, initiate the knowledge transfer to professionals.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
09h-10h20		Plenary session & Poster Presentation	Plenary session	Plenary session	Plenary session
10h20-10h40	@ INES: 10:AM - Welcome	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10h40-12h00	@ INES: Plenary session	Plenary session & Poster Presentation	Plenary session	Plenary session	Plenary session
12h00-13h30	@ INES: Lunch	Lunch	Lunch	Lunch	Lunch
13h30-15h30	@ INES: Plenary session	Parallel HandsOn WorkShop Session	Parallel HandsOn WorkShop Session	Parallel HandsOn WorkShop Session	Parallel HandsOn WorkShop Session
15h30-16h00	@ INES: Coffee Break	Coffee Break	Coffee Break	Coffee Break	Closing @ 4PM
16h00-18h00	@ INES: INES Platform visit	Parallel WorkShop Session	Parallel WorkShop Session	Parallel WorkShop Session	Bus Transfer to Chambery or Lyon airport
19h00-22h00	Transfer to Aussois by Bus Aussois Settlement	Convivial Poster Session	Social event	Gala Dinner	

☆

Dates:
October 15 to 19, 2018

Location:
- On Monday, 15th, 10:00 sessions and visits: INES, Le Bourget du Lac, France
- Monday evening, bus transfer to Aussois
- From Tuesday, 16th to Friday, 19th, 16:00: Centre CNRS Paul Langevin, Aussois, France

- PhD student and post-doc 500 €
  before 15/06/2018, 600 € after
- Others 600 €
  before 15/06/2018, 700 € after

Price includes :
- Accomodation and meals
- Transport between INES and Aussois on Monday evening and the return trip on Friday

Details

The official language of the school is English.

Registration and additional information :

https://www.locie.univ-smb.fr/simurex-2018/

Contact: simurex2018@univ-smb.fr