

# ERCOFTAC/SIG 42

## 12th Workshop on Synthetic Turbulence Models

3rd-4th July 2017, Université Paris-Ouest, Nanterre La Défense, France

## Synthetic flows for heat and mass transfer

Amphi S3 bâtiment S / Lecture Theatre S3 building S (see map)  
Université Paris-Ouest, 200 Avenue de la République,  
92000 Nanterre, France

Programme as of 29<sup>th</sup> June, 2017

### Monday 3rd July 2017

9:45-10:00 **Arrival Opening** - presentation of LME - (D. Queiros Conde)

1st session - chair F. Nicolleau

10:00-10:40 O. G. Chkhetiani and M. Kurganski, Obukhov Atm. Inst. Moscow, Russia  
*Helicity in the atmospheric dynamics and turbulence theory*

10:40-11:20 S. Strijhak, Institute for System Programming of the Russian Academy of Science, Russia  
*LES and KS Applications of Wind Energy in the Atmospheric Boundary Layer*

11:20-12:00 J. Schrötle &, Zbigniew Piotrowski, Institute for Atmospheric Physics, German Aerospace Center  
Inst. of Met. and Water Management, Warsaw; Dept of Phys., Th. Met., University of Munich (LMU)  
*Large-eddy simulations of a wind turbine wake above a forest*

12:00-13:30 **Lunch break**

2nd session - chair D. Queiros Conde

13:30-14:10 A. Khan, School of Civil Engineering, University of Leeds, UK  
*LES of urban airflow and natural ventilation*

14:10-14:50 F. Nicolleau, Sheffield Fluid Mechanics Group, University of Sheffield, UK  
*Effect of non Kolmogorov spectra on particle clustering*

14:50-15:30 J.M. Redondo et al., Fisica Aplicada UPC, Spain  
*Synthetic Simulations of Convective and Overturning Flows*

15:30-16:00 **Break**

3rd session - chair A.M. Khan

16:00-16:30 N. A. Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia  
*A non-local theory of turbulent particle pair diffusion*

16:30-17:00 S. M. Usama and N. A. Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia  
*Turbulent inertial particle pair diffusion*

16:00-17:30 J.M. Redondo, Fisica Aplicada UPC, Spain  
*Rayleigh-Taylor Mixing analysis and Intermittency*

19:00-00:00 **Dinner**

## Tuesday 4th July 2017

### 4th session - chair T. Michelitsch

- 9:00-09:40 A.F. Nowakowski, Sheffield Fluid Mechanics Group, University of Sheffield, UK  
*A computationally efficient method for multicomponent flows*
- 9:40-10:20 M. Bestehorn, Brandenburg University of Technology, Cottbus - Senftenberg, Germany  
*Instabilities and Pattern Formation in Mechanically Vibrating Thin Films*
- 10:20-10:40 **Break**

### 5th session - chair N. Malik

- 10:40-11:10 D. Queiros Conde, Université Paris-Ouest, Nanterre La Défense, France  
*The scale-entropy diffusion equation: towards a trans-scale mechanics*
- 11:10-11:40 P. Ribeiro, Université Paris-Ouest, Nanterre La Défense, France  
*Facts on fractals: a route to scale dependency*
- 11:40-12:10 Y. Canivet, Université Paris-Ouest, Nanterre La Défense, France  
*Fractal Model of heat exergy*

### 12:10-13:30 Lunch break

### 6th session - chair J.M. Redondo

- 13:30-14:00 S. M. Usama, J. M. Kopec, J. Tellez, K. Kwiatkowski, J. M. Redondo and N. A. Malik, King Fahd University of Petroleum and Minerals, Saudi Arabia  
*Mixing in 3D sparse multi-scale grid generated turbulence*
- 14:00-14:30 J. Tellez Alvarez, Instituto Flumen (UPC), Barcelona, Spain  
*SFIV and Schlieren Techniques in Complex Flows*
- 14:30-15:00 J. Tellez Alvarez, Instituto Flumen (UPC), Barcelona, Spain  
*Performance assessment of numerical modelling for hydraulic efficiency of a grated inlet*

### 15:00-15:30 Break

### 7th session - chair A.F. Nowakowski

- 15:30-16:00 T. Michelitsch et al., Université Pierre et Marie Curie, Institut Jean le Rond d'Alembert, Paris, France  
*Fractional random walks on regular networks and lattices*
- 16:00-16:30 A. Perez Riascos, Department of Civil Engineering, Universidad Mariana, San Juan de Pasto, Columbia  
*Random walks on networks: Lévy flights and fractional transport*
- 16:30-17:00 E. Sánchez-Cordero  
*Three-dimensional dam break flow simulation using OpenFOAM*