

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 12th June, 2017

Monday 3rd July 2017

- 9:40-10:00 **Arrival Coffee? - Opening** - presentation of LME?
(Diogo 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 Schliering 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 M. Reeks, University of Newcastle, UK
- 16:30-17:00 E. Sánchez-Cordero
Three-dimensional dam break flow simulation using OpenFOAM