



## 5th Workshop on Synthetic Turbulence Models

# Synthetic Turbulence and Vortex Flow

1-3 July 2009, Warsaw

# PROGRAMME

### Venue:

Warsaw University of Technology  
Faculty of Power and Aeronautical Engineering  
Institute of Heat Engineering (so called ITC building)  
Conference **room 105**  
25 Nowowiejska Street

### Organizing committee:

Andrzej Nowakowski	Sheffield Fluid Mechanics Group
Jacek Rokicki	Politechnika Warszawska
Konrad Bajer	Uniwersytet Warszawski
Claude Cambon	École Centrale de Lyon
Franck Nicolleau	Sheffield Fluid Mechanics Group

Wednesday 1<sup>st</sup> July 2009

(Session chair Andrzej Nowakowski)

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**10:00** Registration & Welcome

**10:15** Introduction (Jacek Rokicki and Konrad Bajer)

**10:30 – 11:00** Talk 1

**Konrad Bajer** (Institute of Geophysics, Warsaw University)

*Turbulence in superfluid helium*

**11:00 – 11:30** Talk 2

**Yi Li** (Sheffield Fluid Mechanics Group, The University of Sheffield)

*Vorticity and geometrical statistics in isotropic helical turbulence*

**11:30 – 12:00** **COFFEE BREAK**

**12:00 – 12:30** Talk 3

**Henryk Kudela** (Wroclaw University of Technology)

*Vortex particle method, the boundary conditions and eruption of boundary layer*

**12:30 – 13:00** Talk 4

**Martin Priego Wood** (Aeronautical Department, Imperial College London)

*Synthetic turbulent-like flows realisable in the laboratory*

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**13:00 – 14:00** **LUNCH at EUROBAR** (ITC building)

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**14:00 – 14:30** Talk 5

**Srabon Muztaba Salim** (Sheffield Fluid Mechanics Group, The University of Sheffield)

*Visualisation of fuel spray injected in turbulent flow*

**14:30 – Tour of the Institute of Aeronautics and Applied Mechanics**

*TBC*

Thursday 2<sup>nd</sup> July 2009

(Session chair Franck Nicolleau)

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10:00 – 10:30 Talk 6

**Carlos Rosales** (Técnica Federico Santa María, Valparaiso, Chile)

*Synthetic Turbulence via the Multiscale Lagrangian Map Approach*

10:30 – 11:00 Talk 7

**Charles Meneveau** (Johns Hopkins University, Baltimore)

*Minimal map synthetic turbulence: Intermittency and anomalous scaling*

11:00 – 11:30 Talk 8

**Benjamin Favier** (Ecole Centrale de Lyon)

*Synthetic models and DNS for MHD turbulence with external magnetic field and rotation*

11:30 – 12:00 **COFFEE BREAK**

12:00 – 12:30 Talk 9

**Ania Matulka** (Universidad Politecnica de Catalunya, Barcelona)

*Vorticity decay in stably stratified decaying turbulence*

12:30 – 13:00 Talk 10

**Konrad Gumowski** (Warsaw University of Technology)

*Wake behind a sphere - experimental research*

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13:00 – 14:00 **LUNCH at EUROBAR** (ITC building)

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14:00 – 14:30 Talk 11

**GuoWei He** (Institute of Mechanics, Chinese Academy of Sciences, Beijing)

*Computation of space-time correlations by large-eddy simulation:  
an application to aero-acoustics*

14:30 – 15:00 Talk 12

**Claude Cambon** (Ecole Centrale de Lyon)

*Axisymmetric turbulence: towards a theory for both statistics and dynamics*

15:00 – 15:30 **COFFEE BREAK**

15:30 – 16:00 Talk 13

**Jacek Szumbarski** (Warsaw University of Technology)

*Low-Reynolds-number instabilities of channel flows*

16:00 – 16:30

**General discussion**

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19:00 **CONFERENCE DINNER (venue TBA)**

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Friday 3<sup>rd</sup> July 2009

(Session chair Jacek Rokicki)

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**10:00 – 10:30** Talk 14

**Franck Nicolleau** (Sheffield Fluid Mechanics Group, The University of Sheffield)

*Turbulence generated after a fractal orifice*

**10:30 – 11:00** Talk 15

**Hongwei Zheng** (Sheffield Fluid Mechanics Group, The University of Sheffield)

*DES of fractal orifices*

**11:00 – 11:30** Talk 16

**Thomas Michelitsch** (CNRS Institute Jean Le Rond d'Alembert University of Paris VI)

*Dispersion relations for self-similar quasi-continuous linear chains*

**11:30 – 12:00** **COFFEE BREAK**

**12:00 – 12:30** Talk 17

**Jose Redondo** (Universidad Politecnica de Catalunya, Barcelona)

*Structure functions and intermittency in KS and DNS models of two-dimensional turbulence.*

**12:30 – 13:00** Talk 18

**Andrzej Nowakowski** (Sheffield Fluid Mechanics Group, The University of Sheffield)

*Computing the evolution of interfaces using multi-component flow equations*

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**13:00 – 14:00** **LUNCH at EUROBAR** (ITC building)

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**14:00 – 15:00** **General discussion and conclusions**

**15:00 – 15:30** **COFFEE BREAK**

**15:30** **End of conference**