

First IMS Turbulence Workshop

Interscale energy transfers in various turbulent flows

in collaboration with ERCOFTAC SIG 35 and COST

March 26-28, 2007, Institute for Mathematical Sciences, Imperial College London

*All lectures in IMS Seminar Room, Institute for Mathematical Sciences, Imperial College London,
53 Princes Gate, Exhibition Road, South Kensington, London SW7 2PG*

Organizers: Claude Cambon, Arkady Tsinober and Christos Vassilicos

Monday, March 26, 2007

Registration and coffee 9:15- 10:00

CHAIR: J.C. VASSILICOS

10:00 - 10:40 *Darryl Holm* (London) - d.holm@imperial.ac.uk, Averaged Vorticity Alignment Dynamics

10:40 - 11:20 *Robert Rubinstein* (USA) - r.rubinstein@larc.nasa.gov, Unbalanced vortex stretching in non-stationary turbulence.

11:20 -12:00 *Arkady Tsinober* (London) – a.tsinober@imperial.ac.uk, On balance of enstrophy production and its dissipation.

Lunch 12:00 – 14:00

CHAIR: S. KIDA

14:00 - 14:40 *Beat Luethi* (Denmark) - beat.luthi@risoe.dk, Energy flux to subgrid scales as obtained from particle tracking

14:40 – 15:20 *Koji Ohkitani* (Sheffield) - K.Ohkitani@sheffield.ac.uk, Survey and numerical simulation of Lagrangian stability of ideal fluid motion

15:20 -16:00 *K. Kiyani and D.McComb* (Edinburgh) - khurom@googlemail.com, w.d.mccomb@ed.ac.uk, Markovianized Single-time Local Energy Transfer: A K41 compatible Eulerian spectral closure for isotropic turbulence with no tuning parameters.

Coffee break 16:00 -16:30

CHAIR: D. HOLM

16:30 – 17:10 *Edriss Titi* (Israel and USA) - edriss.titi@weizmann.ac.il, etiti@math.uci.edu Mathematical Study of Certain Analytical Sub-grid Scale Models of Turbulence

17:10 – 17: 50 *Bernard Geurts* (The Netherlands) - b.j.geurts@math.utwente.nl, Regularization modeling of compressible rotating turbulence.

Tuesday, March 27, 2007

CHAIR: C. CAMBON

10: 00 - 10:40 *Alain Pumir* (France) **TBA**

10:40 - 11:20 *Kay Schneider* (Marseille), - kschneid@cmi.univ-mrs.fr, Quantifying anisotropy in stratified and rotating turbulence using orthogonal wavelets.

11:20 -12:00 *F.C.G.Nicolleau* (Sheffield) - F.Nicolleau@sheffield.ac.uk, Kinematic Simulation and Rapid Distortion Theory analyses of one-particle diffusion in stably stratified and rotating

Lunch 12:00 – 14:00

CHAIR: J. RILEY

14:00 - 14:40 *Shigeo Kida* (Japan) - kida@mech.kyoto-u.ac.jp, Flow structure in a sphere of precession.

14:40 - 15:20 *Sergei I. Chernyshenko and Maxym E. Bondarenko* (Southampton)- chernysh@soton.ac.uk, Master-mode set for 3D turbulent channel flow.

15:20 -16:00 *H.J.H.Clercx* (Eindhoven) - H.J.H.Clercx@tue.nl, Turbulent Rotating Rayleigh-Benard Convection: DNS and SPIV Measurements

Coffee break 16:00 -16:30

CHAIR: D. MCCOMB

16:30 – 17:10 *Christopher Keylock* (Leeds) - C.J.Keylock@leeds.ac.uk , Properties of the wake structure behind fences with a fractal arrangement of horizontal strut

17:10 – 17: 50 *Christos Vassilicos* (London) - j.c.vassilicos@imperial.ac.uk, Fractal-generated turbulence

Wednesday, March 28, 2007

CHAIR: A. TSINOBER

10:00 – 10:40 *James Riley* (USA) - rileyj@u.washington.edu, Turbulence and Energy Transfer in Strongly-Stratified Turbulence

10:40 - 11:20 *Claude Cambon* (Lyon) - Claude.Cambon@ec-lyon.fr, Toroidal energy cascade: application to anisotropic morphology and nonlinear dynamics of turbulence with strong stable Stratification.

11:20 -12:00 *Joel Sommeria* (Grenoble) - sommeria@hmg.inpg.fr, Decaying grid turbulence in a rotating stratified fluid

12:00 – 12:15 *Jose M. Redondo* (Barcelona) – redondo@fa.upc.edu Hyperdiffusivity in stratified-rotating flows.

Lunch 12:00 – 14:00

Discussions and Closing 14:00