The 21st Century COE Program for Research and Education on Complex Functional Mechanical Systems

International Symposium on Nonlinear Analysis on Chaotic Mixing, Flow Instability and Turbulent Motion of Fluids

March 17 (Wed) and 18 (Thu), 2004
Room 312, Faculty of Engineering Dept. of Physics Bldg., Kyoto University
京都大学工学部物理系校舎 312 室（吉田キャンパス）

March 17 (Wed)

10:00–10:05 Opening address M. Nagata (Kyoto University)

Session 1: Chaotic mixing

10:05–11:20 Predicting chaotic diffusivity coefficients with Eulerian symmetry measures in wavy Taylor vortex flow
G.P. King (University of Warwick)

11:20–11:50 Mixing process in a spatially periodic three-dimensional flow
Y. Mizuno and M. Funakoshi (Kyoto University)

13:00–14:00 Experimental observation of chaotic mixing in rotating flow systems
N. Ohmura, T. Makino, T. Takigawa, M.N. Noui-Mehidi and K. Kataoka (Kobe University)

14:00–14:30 Chaotic mixing and deformation of fluid elements in a short time
M. Funakoshi and H. Kawazoe (Kyoto University)

Session 2: Flow instability 1

15:00–15:50 Regular patterns and phase turbulence of convecting fluids in rotating systems
F.H. Busse (University of Bayreuth)

15:50–16:20 Nonlinear thermal convection between differentially rotating cylinders
P.V. Long and M. Nagata (Kyoto University)

16:20–17:00 Nonlinear stability of rotating Poiseuille flow
D. Wall, T. Mitsumodi and M. Nagata (Kyoto University)

March 18 (Thu)

Session 3: Flow instability 2

10:00–10:45 Transition in shear flows with an internal heat source
S.C. Generalis (Aston University) and M. Nagata (Kyoto University)

10:45–11:15 A nonlinear analysis on mixed convection in a vertical channel
S. Ishida and M. Nagata (Kyoto University)

11:15–12:00 Side-band instability of plane waves, revisited
K. Fujimura (Tottori University)

Session 4: Turbulence

13:30–14:30 Fractal patterns in chaotic advection
T. Tel (Eötvös Lorand University)

14:45–15:45 Spectrum and intermittency in passive scalar turbulence
T. Gotoh (Nagoya Institute of Technology)

16:00–17:00 Self-similarity and coarse-grained dissipation rates in turbulence
H. Fujisaka, T. Kono and Y. Nakayama (Kyoto University)