17th International Couette-Taylor Workshop
University of Leeds, July 25-27 2011

Monday July 25

8:30 – 9:15 Welcome and Registration

S Altmeyer, C Hoffmann
Secondary bifurcation of mixed cross-spirals connecting different travelling wave solutions

R Lueptow, E Serre, D Martinand
The transition to wavy vortices

H Furukawa, M Ohno, N Ohazama, N Suzuki, T Watanabe
Analysis of Taylor vortex flow with small aspect ratio by particle image velocimetry (PIV) method

Y Tasaka, M Iima
Global flow transition induced by local disturbances generated by rotor-cylinder gap in rotating fluids with free surface

C Guervilly, P Cardin, N Schaeffer
A dynamo driven by zonal jets at the upper surface: applications to giant planets

10:30 – 11:00 Coffee Break

D Brito, T Alboussière, P Cardin, N Gagnière, D Jault, P La Rizza, J-P Masson, H-C Nataf, D Schmitt
Zonal shear and super-rotation in a magnetized spherical Couette flow experiment

C Gissinger, A Roach, E Edlund, E Spence, H Ji, J Goodman
Magnetorotational instability (MRI) in laboratory experiments

M Seilmayer, G Gerbeth, T Gundrum, F Stefani, T Weier, M Gellert, G Rüdiger
A liquid metal experiment on the Tayler instability

M Gellert, G Rüdiger, M Schultz, F Stefani, M Seilmayer
Tayler instability influenced by internal heating

O Kirillov, F Stefani
Paradox of Velikhov-Chandrasekhar and the ultimate limit for the onset of helical magnetorotational instability

12:30 – 2:00 Lunch

R Hollerbach, X Wei, A Jackson
Electromagnetically driven flows in a rapidly rotating spherical shell

T Watanabe
Bead-like vortex and sickle-like vortex found around a thick rotating disk in a casing
A Christl, N Scurtu, C Egbers
Eccentric Taylor-Couette flow with orbital motion of the inner cylinder

P Stücke, M Schmidt, M Nobis
Three-dimensional computation of the Couette flow in journal bearings

T Seelig, U Harlander, R Faulwetter, C Egbers
Irregular and singular vector growth in the differentially heated rotating annulus

3:30 – 4:00 Coffee Break

D Barkley (Invited Talk, 45 minutes)
Simplifying the complexity of pipe flow

G Pfister, M Heise, C Will, O Staack, J Abshagen
A stationary-turbulent transition in enclosed Taylor-Couette flow

M Burin
Gap-width and end-cap effects on the sub-critical transition to turbulence

5:30 – 6:30 Drinks Reception

Tuesday July 26

9:00 – 9:15 Registration Desk Open

M Gassa Feugaing, O Crumeyrolle, I Mutabazi
Modulated Couette-Taylor flow

C Panades, F Marques
Bifurcations to three-dimensional flows in a periodically driven cylindrical cavity

T Watanabe
Time constant in the onset and decay flow of Taylor-Couette flow around critical Reynolds number

R Khayat, B Albaalbaki
Non-Newtonian induced thermal convection patterns

10:30 – 11:00 Coffee Break

N Latrache, I Mutabazi, O Crumeyrolle
Transition to inertioelastic turbulence via spatio-temporal intermittency in a viscoelastic Couette-Taylor flow

N Scurtu, P Gorenz, C Egbers
Magnetorotational-type instability in Couette-Taylor flows of viscoelastic polymeric liquids

B Albenyahia, C Lemaître, C Nouar
Taylor-Couette flow of viscoplastic fluids
S Papacek, V Stumbauer, D Stys, K Petera
Couette-Taylor photo-bioreactor: A perfect tool to explore both the impact of hydrodynamic mixing and shear stress on microalgae cells

V Stumbauer, S Papacek, V Kotal, D Stys, K Petera
Couette-Taylor photo-bioreactor: A perfect tool to explore the microalgae cell damage by shear stress

12:30 – 2:00 Lunch

C Sun, D van Gils, S Huisman, G-W Bruggert, D Lohse (Invited Talk, 45 minutes)
Torque scaling in turbulent Taylor-Couette flow with co- and counter-rotating cylinders

S Tokgoz, G Elsinga, R Delfos, J Westerweel
An experimental study on the influence of the coherent structures to the torque scaling in turbulent Taylor-Couette flow

M Paoletti, D Lathrop
Turbulent angular momentum transport measurements in rapidly rotating Taylor-Couette flow up to $Re = 4.4 \cdot 10^6$

S Merbold, C Egbers
Turbulent Couette-Taylor flow - An experimental investigation of the angular momentum flux

3:30 – 4:00 Coffee Break

H Brauckmann, B Eckhardt
Torque calculations for Taylor-Couette flow

F Marques, J Lopez
Boundary layer instabilities in rapidly rotating flows

S Huisman, D van Gils, C Sun, D Lohse
Turbulent statistics in Taylor-Couette flow

D van Gils, D Guzman, C Sun, D Lohse
Drag reduction, bubble distribution and velocity profiles in bubbly turbulent Taylor-Couette flow (Awarded best student presentation prize)

6:30 – 10:00 Dinner

Wednesday July 27

9:00 – 9:15 Registration Desk Open

D Zhilenko, O Krivonosova
Various turbulent states in wide gap spherical layer
D Zhilenko, O Krivonosova
Secondary flow state selection in wide gap spherical layer under inner sphere acceleration action: experiment and DNS

S Koch, U Harlander, R Hollerbach, C Egbers
Laboratory experiment and numerical simulations of inertial wave interactions in a rotating spherical shell

K Bühler
Numerical simulations of spherical gap flows with superimposed mass flux

10:30 – 11:00 Coffee Break

J Lopez (Invited Talk, 45 minutes)
Rotating thermal convection

B Futterer, F Zaussinger, S Koch, A Krebs, C Egbers
Nonlinear effects and associated instabilities in iso-viscous and temperature-dependent viscous thermal convection in spherical shells

F Feudel, L Tuckerman, C Egbers
Convection patterns in a central forced spherical fluid shell under microgravity conditions

O Crumeyrolle, M Smieszek, I Mutabazi, C Egbers
Dielectrophoretic instabilities in annular configurations

12:30 – 2:00 Lunch

K Hirata, N Nakamura, H Tanigawa
On the effect of forced-oscillation amplitude upon thermal convection in a cube

R Bellatreche, M Ouali, A Bouabdallah
Assessment of entropy variation in Taylor-Couette flow

T von Larcher, A Fournier, R Hollerbach
The influence of bottom topography on the linear stability of baroclinic waves in the thermally driven rotating annulus

M Nagata, K Deguchi
Mirror symmetric travelling wave solution in plane Poiseuille flow

3:00 – 3:30 Coffee and Farewell