

**Scientific programme**

**Monday, September 19, 2011**

	<b>Session 1</b>	Chair: J. Schumacher
09:00-09:50	<b>Very strong thermal convection - How to interpret the exciting experimental findings in the ultimate Rayleigh number regime</b>	S. Grossmann
09:50-10:40	<b>Two frontiers in turbulent Rayleigh-Bénard convection</b>	G. Ahlers

10:40-11:10	Coffee break
-------------	--------------

	<b>Session 2</b>	Chair: J. Schumacher
11:10-11:25	Velocity structures in turbulent Rayleigh-Bénard convection	L. Li
11:25-11:40	Boundary layer structure in turbulent Rayleigh-Bénard convection	N. Shi
11:40-11:55	Transitions in turbulent rotating Rayleigh-Bénard convection	A. Tilgner
11:55-12:45	<b>Coherent structures in rotating RB convection</b>	H. Clercx

13:00-14:30	Lunch
-------------	-------

	<b>Session 3</b>	Chair: A. Thess
14:30-15:20	<b>Structures and dynamics of velocity and temperature boundary layer profiles in turbulent thermal convection: Experiments and simulations</b>	K.-Q. Xia
15:20-16:10	<b>Side wall effects in turbulent thermal convection</b>	R. Verzicco

16:10-16:40	Coffee break
-------------	--------------

	<b>Session 4</b>	Chair: A. Thess
16:40-16:55	The dynamics of coherent structures induced by obstacles in turbulent flows	C. Kähler
16:55-17:10	The role of boundary layers in vacillating flows in the thermally-driven rotating annulus	W.-G. Früh
17:10-17:25	Modelling the wall roughness influence on the heat transfer in thermal convection	O. Shishkina
17:25-17:40	Temperature statistics in turbulent Rayleigh-Bénard-convection	J. Lülff
17:40-17:55	Viscous and thermal boundary layers in simulated turbulent Rayleigh-Bénard convection	J. Scheel
17:55-18:10	Bifurcation for natural convection in horizontal annuli	G. Thäter

18:40	Dinner and Postersession
-------	--------------------------

## Tuesday, September 20, 2011

	<b>Session 5</b>	Chair: C. Egbers
09:00-09:50	<b>Theory of liquid metal experiments in rotating cylinders and spheres</b>	R. Hollerbach
09:50-10:40	<b>Ultimate Taylor-Couette turbulence</b>	D. Lohse

10:40-11:10	Coffee break
-------------	--------------

	<b>Session 6</b>	Chair: C. Egbers
11:10-11:25	Experimental investigation of torque scaling in turbulent Taylor-Couette flow	S. Merbold
11:25-11:40	Turbulent transitions in rotating shear systems	M. Salewski
11:40-11:55	Bubble deformability is crucial for strong drag reduction in turbulent Taylor-Couette flow	C. Sun
11:55-12:45	<b>Experimental observations in Taylor-Couette and Spherical-Couette flows, up to <math>R = 1.5 \cdot 10^7</math></b>	D. Lathrop

13:00-14:30	Lunch
-------------	-------

	<b>Session 7</b>	Chair: B. Hof
14:30-15:20	<b>Exact coherent structures in 2D and 3D turbulence experiments</b>	M. Schatz
15:20-16:10	<b>Laminar-turbulent banded patterns in transitional plane Couette flow</b>	L. Tuckerman

16:10-16:40	Coffee break
-------------	--------------

	<b>Session 8</b>	Chair: B. Hof
16:40-16:55	A stationary-turbulent transition in enclosed Taylor-Couette flow	G. Pfister
16:55-17:10	Measurement of angular momentum transport in turbulent Taylor-Couette flow with independently rotating cylinders	M. Paoletti
17:10-17:25	Spherical Taylor-Couette flow control using two immiscible fluids	Z. Tigrine
17:25-17:40	Transition to turbulence in spherical gap flows with and without superimposed mass flux	K. Bühler
17:40-17:55	Transitional Couette flow: birth and death of turbulent bands	P. Manneville
17:55-18:10	Numerical study of Kelvin-Helmoltz instability in the laminar-turbulent oblique bands of plane Couette flow	J. Rolland

18:40	Dinner and Wine tasting
-------	-------------------------

## Wednesday, September 21, 2011

	<b>Session 9</b>	Chair: B. Eckhardt
09:00-09:50	<b>Invariant solutions and dynamics of rectangular duct flow</b>	M. Uhlmann
09:50-10:40	<b>Dynamics of coherent structures in localized turbulence in a pipe</b>	J. Westerweel

10:40-11:10	Coffee break
-------------	--------------

	<b>Session 10</b>	Chair: B. Eckhardt
11:10-11:25	The onset of turbulence in pipe and Taylor-Couette flows	K. Avila
11:25-11:40	Bifurcation cascade of travelling waves in pipe flow	F. Mellibovsky
11:40-11:55	Tracking the evolution of transitional flow structures in a low Reynolds number pipe flow	Ö. Ertunç
11:55-12:45	<b>Optimal path to turbulence in shear flows</b>	D. Henningsson

13:00-14:30	Lunch
-------------	-------

	<b>Session 11</b>	Chair: A. Delgado
14:30-15:20	<b>Modeling pipe flow</b>	D. Barkley
15:20-15:35	Periodic orbits embedded in turbulent pipe flow	A. Willis
15:35-15:50	Edge states in boundary layer flows	Y. Duguet

15:50-16:20	Coffee break
-------------	--------------

	<b>Session 12</b>	Chair: A. Delgado
16:20-16:35	Numerical approach modified Graetz problem in MHD	S. Lecheheb
16:35-16:50	Numerical simulation of a turbulent oscillatory pipe flow	D. Feldmann
16:50-17:05	Noise in a long pipe surrounded by a turbulent boundary layer	J. Abshagen

17:05	Closing
-------	---------

## Postersession

1. S. Wagner – Large scale motion and local heat flux in turbulent Rayleigh-Bénard convection of  $SF_6$  in cylindrical containers
2. G. Freund – Rayleigh-Bénard convection in nanofluids with a particle-concentration-dependent thermal conductivity
3. F. Chilla – Comparison between rough and smooth plates within the same Rayleigh-Bénard cell
4. R. Stevens – Prandtl and Rayleigh number dependence of heat transport in high Rayleigh number thermal convection
5. T. von Larcher – Multivariate data analysis methods for detecting baroclinic wave dynamics in the thermally driven rotating annulus
6. T. von Larcher – Multiple scales in fluid dynamics and meteorology – The DFG Priority Program 1276 'MetStröm'
7. M. Emran – Local transport currents and thermal dissipation rate in Rayleigh-Bénard convection
8. B. Futterer – Non-linear effects and associated instabilities in spherical Rayleigh-Bénard experiments with variation of the viscosity contrast
9. M. Abel – Rayleigh-Bénard convection in a soap film
10. I. D. Borcia – Attractors, eigenvalues and mean flow interactions in a fluid confined between two co-rotating cylinders
11. M. Ouali – Baroclinic instability in cylindrical Taylor-Couette flow
12. R. Bellatreche – Acceleration effect in controlling Taylor-Couette flow
13. M. Avila – Angular momentum transport of flows between co-rotating cylinders
14. H. Brauckmann – Torque calculations for Taylor-Couette flow
15. N. Herzog – Viscoelastic fluid instability in analogy with the magnetorotational instability in Taylor-Couette flows
16. A. Christl – Eccentric Taylor-Couette flow with orbital motion of the inner cylinder
17. L. Shi – Onset of sustained turbulence in Couette flow
18. D. Krug – 3D-PTV measurements in plane Couette flow
19. S. Altmeyer – Secondary bifurcation of mixed-cross-spirals connecting different travelling wave solutions

20. S. Tokgöz – Experiments of tomographic PIV in Taylor Couette geometry
21. H. A. Vaidya – Numerical simulations of swirling pipe flows - Characteristics of swirl decay and emergence of vortex structures
22. A. Stephan – Wake vortex evolution in ground proximity
23. C. Egbers – First results from large pipe test facility at BTU Cottbus
24. F. Aldudak – Dissipation element analysis in turbulent channel flow
25. S. Zammert – The edge of chaos in plane Poiseuille flow
26. T. Misaka – Vortex bursting and tracer transport of a counter-rotating vortex pair
27. T. Madré – Edges states for the turbulence transition in the asymptotic suction boundary layer
28. J. C. Pfeifer – Motion of inertial particles in cellular flow field