

Agenda for the 2nd Annual Meeting 2021

SPP 1881 Turbulent Superstructures

Wednesday, 8th of December

12:00 - 13:00 arrival and food

13:05 – 13:15 Welcome

Jörg Schumacher (TU Ilmenau)

13:15 – 13:45 Eulerian and Lagrangian Statistics of Superstructures in a Turbulent Boundary Layer

Matthew Bross (UniBW München)

13:45 – 14:15 Controlling the scale of supergranules in convection by weak rotation

Philipp Vieweg (TU Ilmenau)

14:15 – 14:45 Lagrangian analysis of dynamics and transport properties in turbulent flows

Christiane Schneide (Leuphana Universität Lüneburg)

14:45 – 15:15 coffee break

15:15 – 15:45 Towards a description of turbulent superstructures through curvature and torsion statistics of Lagrangian particle trajectories

Moritz Linkmann (University of Edinburgh)

15:45 – 16:15 Investigating large-scale structures in TBL flows with Lagrangian Particle Tracking and development of related methods

Daniel Schanz (DLR Göttingen)

16:15 – 16:45 Multi-scale POD analysis and visualization on VLSMs in turbulent channel flows (I)

Cheng Chi (Otto von Guericke Universität Magdeburg)

16:45 – 17:15 Multi-scale POD analysis and visualization on VLSMs in turbulent channel flows (II)

Steve Wolligandt (Otto von Guericke Universität Magdeburg)

18:00 – open end dinner at hotel

Thursday, 9th of December

09:00 – 09:30 Volumetric measurements of temperature and velocity in Rayleigh-Bénard convection

Theo Käufer (TU Ilmenau)

09:30 – 10:00 Experimental study of extreme events in Rayleigh-Bénard convection

Valentina Valori (TU Ilmenau)

10:00 – 10:30 coffee break

10:30 – 11:00 Experimental investigation of superstructures in turbulent liquid metal convection

Sylvie Su (Helmholtz Centre Dresden-Rossendorf)

11:00 – 11:30 Experiments on very large structures in fully developed pipe flow

El-Sayed Zanoun (BTU Cottbus)

11:30 – 12:00 How do turbulent superstructures interact with skin-friction drag

Lars von Deyn (KIT)

12:00 – 13:30 lunch break at hotel

13:30 – 14:00 Global energetic behaviour of superstructures in Couette flows
Andrea Andreolli (KIT)

14:00 – 14:30 Effective description of turbulent superstructures in simple shear flows
Fabián Álvarez-Garrido (Universität Bayreuth)

14:30 – 15:00 The structure of Rayleigh-Taylor turbulence in presence of sub-leading effects
Stefano Brizzolara (ETH Zürich)

15:00 – 15:30 coffee break

15:30 – 16:00 Spatio-Temporal Visual Analysis of Turbulent Superstructures in Unsteady Flow
Behdad Ghaffari (TU München)

16:00 – 16:30 Recent advances in finding and modeling structures in turbulent flows
George Haller (ETH Zürich)

16:30 – 17:00 Taylor rolls on tour
Marc Avila (Universität Bremen)

18:30 – open end joint dinner at hotel

Friday, 10th of December

09:00 – 09:30 Extended lifetime of respiratory droplets and its implications on airborne disease transmission
Detlef Lohse (TU Twente)

09:30 – 10:00 Multiphase RB with hydrophilic, hydrophobic and patterned boundary conditions
Rui Yang (TU Twente)

10:00 – 10:30 coffee and networking break

10:30 – 11:00 Novel 3D oblique modes in plane shear flows
Alparslan Yalcin (TU Darmstadt)

11:00 – 11:30 Investigation of three-dimensional cohesive motions in a turbulent boundary layer using the Finite-Time Lyapunov Exponent (FTLE)
Ulrich Rist (Universität Stuttgart)

11:30 – 12:00 Meeting summary (*J. Schumacher*)

12:00 – 13:00 food and departure

Groups that might submit a **written report**:

1. Length and time scales of super structures in Rayleigh-Benard convection (*Johannes Bosbach, DLR Göttingen*)
2. Energy transfer between large-scale coherent structures and the incoherent part of the flow in turbulent pipe flow (*Jörn Sesterhenn, Uni Bayreuth*)
3. Genesis and Features of Dust Devil Like Vortices in Convective Boundary Layers – A Comparative Study using DNS/LES and Laboratory Experiments (*Ronald du Puits, TUIL*)