

Agenda – Annual Workshop DeepTurb

Warnemünde, 4 to 6 October 2021
Ringhotel Warnemünder Hof, Stolteraer Weg 8, 18119 Warnemünde

Monday, 4 October 2021

Arrival at Hotel and check-in 12:45

Lunch 13:00-14:00

14:00-14:10 Jörg Schumacher: Welcome

14:10-14:50 Philipp Pfeffer: Quantum Reservoir Computing for the Lorenz 63 model (30+10)

14:50-15:10 Constanze Poll: Quantum reservoir computing: benefits and drawbacks (15+5)

15:10-16:00 Coffee break

16:00-17:20 Sebastian Peitz (Universität Paderborn):
Efficient data-driven prediction and control of complex systems using the Koopman operator
(60+20)

17:20-18:00 Johannes Viehweg: Reservoir and Multi-Reservoir Topologies (30+10)

18:30 Dinner and free time

Tuesday, 5 October 2021

09:00-10:20 Kathrin Padberg-Gehle (Leuphana Universität Lüneburg):
Computational study of Lagrangian transport in turbulent convection
(60+20)

10:20-11:00 Coffee break

11:00-11:40 Mohammad Sharifi-Ghazijahani: The von Kármán vortex street, a bridgehead for machine learning in turbulence (30+10)

11:40-12:20 Theo Käufer: Investigation of thermal convection by velocity and temperature measurement techniques (30+10)

12:30-13:30 Lunch break

13:30-15:00 Discussion time and/or Baltic Sea beach walk

15:00-15:40 Coffee break

15:40-16:20 Philipp Teutsch: Combined convolutional autoencoder-recurrent neural networks for direct assessment of turbulent heat transfer in thermal convection (30+10)

16:20-17:00 Philipp Schmitz: On the Characteristics and Structures of Dynamical Systems Suitable for Reservoir Computing (30+10)

17:00-17:40 Florian Heyder: Echo state network for a convective boundary layer model (30+10)

18:30 Dinner and free time

Wednesday, 6 October 2021

09:00-09:50 Friedrich Philipp: Finite-data error bounds for Koopman-based prediction and control (40+10)

09:50-10:30 Valentina Valori: Rayleigh-Bénard convection in air: out-of-plane vorticity from stereoscopic PIV measurements (30+10)

10:30-10:50 Coffee break

10:50-11:10 Jonas Hüther: ML-based PIV analysis vs. optical flow (15+5)

11:10-12:00 Jörg Schumacher: Final discussion and next steps

12:00-13:00 Lunch

13:00 Check out, Departure from Warnemünde Bhf.

