RTG DAEDALUS
Virtual Retreat 2022

DAEDALUS
RTG 2433

May 9-10, 2022
(PhD talks 15 min, plus 5 min discussion)

May 09, 2022

09:30 – 09:40 Welcome Wolf-Christian Müller

PhD talks – Session 1: Chair Benjamin Blankertz

09:40 – 10:00 **Benjamin Beck** (P12)
'Reduced model for magnetohydrodynamic turbulence'
Supervisory Team: W.-C. Müller, V. Mehrmann

10:00 – 10:20 **Maria Mathew** (Q11)
'Reduced order turbulence model in magnetohydrodynamics'
Supervisory Team: W.-C. Müller, V. Mehrmann

10:20 – 10:40 **Jiahan Wang** (P10)
'Coherent structure detection and the inverse cascade mechanism in two-dimensional Navier-Stokes turbulence'
Supervisory Team: W.-C. Müller, V. Mehrmann, J. Reiss, and R. Schneider

10:40 – 11:00 **Lukas Moczarski** (Q07)
'The role of thermal plumes as indicators of Lagrangian coherent structures.'
Supervisory Team: W.-C. Müller, A. Ghani, J. Reiss

11:00 – 11:20 ***Break***

PhD talks – Session 2: Chair Gabriele Steidl

11:20 – 11:40 **Florian Beier** (Q03)
'Generalized Optimal Transport Models and Particle Dynamics'
Supervisory Team: G. Steidl, F. Noé, C. Schütte

11:40 – 12:00 **Jonas Fuksa** (Q13)
'Scalably learning dynamical laws from data'
Supervisory Team: J. Eisert, C. Schütte

12:00 – 13:20 ***Break***

PhD talks – Session 3: Chair Barbara Zwicknagl

13:20 – 13:40 **Oleksandr Zlatov** (P05)
'Physiology-informed data augmentation for EEG-based BCIs'
Supervisory Team: B. Blankertz, A. Carpentier

13:40 – 14:00 **Nils Harmening** (P06)
'Enhancing estimations of individual head models'
Supervisory Team: B. Blankertz, A. Carpentier

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14:00 – 14:20	**Gabriel Wagner vom Berg** (Q08) 'Using differential geometry for estimating head model precision' Supervisory Team: B. Blankertz, V. John, R. Schneider
14:20 – 14:30	***Break***
14:30 – 14:50	**Sarah Katz** (Q06) 'Blood Flow Simulations and the Sensitivity of Quantities of Interest to Numerical Modeling' Supervisory Team: V. John, W.-C. Müller, A. Caiazzo
14:50 – 15:10	**Anastasija Pesic** (Q14) 'Variational models for pattern formation in biomembranes' Supervisory Team: B. Zwicknagl, G. Steidl
15:10 – 15:30	**Lukas Abel** (associated project) 'Epitaxy and Dislocations - On Variational Models and their Analysis' Supervisor: B. Zwicknagl
15:30 – 15:50	**Raquel Mäusle** (associated project) 'Three-dimensional topology-driven magnetic reconnection' Supervisor: W.-C. Müller

May 10, 2022

PhD talks – Session 3: Chair Tobias Breiten

09:00 – 09:20	**Vikas Yadav** (Q10) 'Parameter estimation of low order acoustic model imitating pressure signals using data assimilation' Supervisory Team: A. Ghani, V. Mehrmann, T. Breiten
09:20 – 09:40	**Philipp Krah** (P13) 'Broad overview on my PhD projects.' Supervisory Team: V. Mehrmann, J. Reiss, J. Sesterhenn
09:40 – 10:00	**Shubhaditya Burela** (Q09) 'Parametric reduced order modelling for multiple transports with topological changes' Supervisory Team: J. Reiss, T. Breiten, V. John, A. Ghani
10:00 – 10:20	**Alessandro Borghi** (Q12) 'Model Order Reduction and Contour Integral Methods for Nonlinear Eigenvalue Problems' Supervisory Team: T. Breiten, A. Ghani, V. Mehrmann
10:20 – 10:40	***Break***

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PhD talks – Session 4: Chair Volker John

10:40 – 11:00	**Ingo Gühring** (P01) 'Restrospection of my scientific journey with Daedalus' Supervisory Team: K.-R. Müller, C. Schütte
11:00 – 11:20	**Ann-Kathrin Dombrowski** (P02) 'Automated Dissipation Control for Turbulence Simulation with Shell Models' Supervisory Team: K.-R. Müller, W.-C. Müller, F. Noé
11:20 – 11:40	**Saeed Salehinajafabadi** (Q01) 'Machine-Learning the Lagrangian structure of turbulent flows' Supervisory Team: K.-R. Müller, W.-C. Müller, F. Noé
11:40 – 12:00	**Jonas Köhler** (P04) 'Coarse-graining molecular force-fields without forces' Supervisory Team: F. Noé, K.-R. Müller
12:00 – 12:20	**Atharva Kelkar** (Q04) 'Adaptive Sampling Methods for Learning Coarse-Grained Force Fields' Supervisory Team: F. Noé, K.-R. Müller, J. Hermann
12:20 – 12:40	**Nicholas Charron** (Q05) 'Exploring Transferability in Machine-Learned Coarse Grain Force Fields' Supervisory Team: C. Clementi, K.-R. Müller, F. Noé
12:40 – 16:00	***Break***
16:00 – 18:00	**DAEDALUS Faculty Meeting for PRs only**