

Curriculum Vitae
Jörg Schumacher

Institute of Thermodynamics and Fluid Mechanics, P.O.Box 100565, Technische Universität
Ilmenau, D-98684 Ilmenau, Germany

Professional Preparation

PhD in Theoretical Physics from Astrophysical Institute Potsdam, Germany, 1997
MS (Diplom) in Physics from Philipps University, Marburg, Germany, 1994
BS (Vordiplom) in Physics from Humboldt University, Berlin, Germany, 1991

Appointments

since 2018 Visiting Research Professor, Tandon School of Engineering, New York University
since 2013 University Professor for Fluid Mechanics, TU Ilmenau
2008–2013 Heisenberg Research Professor for Theoretical Fluid Mechanics, TU Ilmenau
2005–2008 Assistant Professor for Theoretical Fluid Mechanics, TU Ilmenau
2005 Habilitation in Theoretical Physics and Venia Legendi
2002–2005 Postdoctoral Researcher, Philipps University Marburg
2001–2002 Postdoctoral Fellow, Department of Mechanical Engineering, Yale University
1998–2001 Postdoctoral Fellow, Philipps University Marburg

Awards

2001 Feodor-Lynen Fellowship of the Alexander-von-Humboldt Foundation (AvH)
2009 Thuringian Research Award for Fundamental Research (Citation: "for numerical
simulations of the fine-structure of turbulent flows")
2021 Fellow of the American Physical Society
2022 Advanced Grant of the European Research Council (ERC)

Synergistic Activities

Member of the DFG Review Board of the Division of Fluid Mechanics (since 2020)
Scientific Coordinator of Carl-Zeiss-Foundation Project "DeepTurb – Deep Learning in and of
Turbulence" (2020–2026)
Organizer of Workshop "Phase space analysis in complex systems", Dresden, April 2020
Associate Editor of European Journal of Mechanics B/Fluids (since 2019)
Member of the European Fluid Mechanics Conference (EFMC) Committee (2018–2022)
Member of the Academic Senate of TU Ilmenau (since 2017)
Organizer of the Euromech Colloquium 586 "Turbulent Superstructures in open and closed
flows", Erfurt, July 2017
Member of the IUTAM General Assembly (since 2016)
Scientific Coordinator of DFG Priority Programme 1881 "Turbulent Superstructures",
(2016–2023)
Head of the DFG Research Training Group 1567 "Lorentz Force Velocimetry and Eddy
Current Testing" (2014–2018)
Associate Editor of ASME Applied Mechanics Reviews (2013–2018)
Co-organizer of DFG Workshop "Dynamics of coherent structures in turbulent flows", Bad
Dürkheim, 2011
Editorial Board, Zeitschrift für Angewandte Mathematik und Mechanik (since 2009)

Guest editor (together with Prof. E. Bodenschatz) of focus issue on Perspectives in high-Rayleigh-number convection in *New J. Phys.*, 2010

Member of the Deutsche Physikalische Gesellschaft (DPG), APS, GAMM, Euromech, SIAM
Reviewer for *J. Fluid Mech.*, *Phys. Fluids*, *Phys. Rev. E*, *Phys. Rev. Fluids*, *Phys. Rev. Lett.*, *Europhys. Lett.*, *Phys. Plasmas*, *Nonlinearity*, *New J. Phys.*, *Fluid Dyn. Res.*, *Int. J. Heat Mass Transfer*, *PNAS*, *Sci. Adv.*, *Exp. Fluids*, *J. Atmos. Sci.*, *QJRMS*, *DFG*, *AvH*, *DAAD*, Volkswagen Foundation, Studienstiftung des Deutschen Volkes, FOM (The Netherlands), Icelandic Research Fund, NSF

Invited Plenary Talks

2007 International Supercomputing Conference in Dresden
2011 Annual Meeting of GAMM in Graz
2013 13th European Turbulence Conference in Warsaw
2018 12th European Fluid Mechanics Conference in Vienna
2022 Euromech Colloquium on Stratified Turbulence in Vienna

PhD students

Mohammad S. Emran (PhD 2009); Thomas Weidauer (PhD 2012); Nan Shi (PhD 2013); Saskia Tynpel (PhD 2013); Vinodh Bandaru (PhD 2016); Mikhail Ovsyannikov (PhD 2018); Sebastian Prinz (PhD 2019); Paul Götzfried (PhD 2019); Wenjun Liu (PhD 2019); Till Zürner (PhD 2019); Philipp Vieweg (since February 2020); Florian Heyder (since August 2020); Vladyslav Pushenko (since March 2021); Philipp Pfeffer (since April 2021); Judith Mosandl (since October 2021); Georgy Zinchenko (since August 2022)

Postdocs

Mohammad S. Emran (MPI Göttingen); Jorge Bailon-Cuba (University of Puerto Rico); Bipin Kumar (IITM Pune); Anastasiya Kolchinskaya (KIT); Ambrish Pandey (NYU Abu Dhabi); Christian Kästner (TU Ilmenau); Najmeh Foroozani (De Gruyter); Sandeep Pandey (Veoneer Germany); Valentina Valori (since February 2020); Priyanka Maity (since September 2020); John Panickacheril John (since November 2021); Shashwat Bhattacharya (since November 2021)

Collaborators (past 5 years including name and current institution)

Christian Cierpka (TU Ilmenau); Sven Eckert (Research Centre Dresden-Rossendorf); Bruno Eckhardt (Philipps University Marburg); Dimitrios Giannakis (Dartmouth College); Kartik P. Iyer (Michigan Technological University); Peter Koltai (Free University Berlin); Olivier Pauluis (New York University); Kathrin Padberg-Gehle (University Lüneburg); Janet D. Scheel (Occidental College); Raymond A. Shaw (Michigan Technological University); Katepalli R. Sreenivasan (New York University); Emmanuel Villiermaux (Université Aix-Marseille); Tobias Vogt (Research Centre Dresden-Rossendorf); Victor Yakhot (Boston University); P.K. Yeung (Georgia Institute of Technology);

10 most important publications in chronological order

Full publication list on Google Scholar

1. J. Schumacher, K. R. Sreenivasan, and P. K. Yeung, "Very fine structures in scalar mixing", *J. Fluid Mech.* **531**, 113–121, 2005.

2. J. Schumacher, K. R. Sreenivasan, and V. Yakhot, "Asymptotic exponents from low-Reynolds-number flows", *New J. Phys.* **9**, 89, 2007.
3. J. Schumacher, "Lagrangian dispersion and heat flux in convective turbulence", *Phys. Rev. Lett.*, **100**, 134502, 2008.
4. J. Bailon-Cuba, M. S. Emran, and J. Schumacher, "Aspect ratio dependence of heat transfer and large-scale flow in turbulent convection", *J. Fluid Mech.*, **655**, 152–173, 2010.
5. O. Pauluis and J. Schumacher, "Self-aggregation of clouds in conditionally unstable moist convection", *PNAS* **108**, 12623–12628, 2011.
6. F. Chillà and J. Schumacher, "New perspectives in turbulent Rayleigh-Bénard convection", *Eur. Phys. J. E* **35**, 58, 2012.
7. J. Schumacher, J. D. Scheel, D. Krasnov, D.A. Donzis, V. Yakhot, and K.R. Sreenivasan, "Small-scale universality in fluid turbulence", *PNAS* **111**, 10961–10965, 2014.
8. B. Kumar, J. Schumacher, and R. A. Shaw, "Lagrangian mixing dynamics at the cloudy-clear air interface", *J. Atmos. Sci.* **71**, 2564–2580, 2014.
9. A. Pandey, J. D. Scheel, and J. Schumacher, "Turbulent superstructures in Rayleigh-Bénard convection", *Nat. Commun.* **9**, 2118, 2018.
10. J. Schumacher and K. R. Sreenivasan, "Colloquium: Unusual dynamics of convection in the Sun", *Rev. Mod. Phys.* **92**, 041001, 2020.