

## Journal Papers (Excerpt)

2025

Wegmann, Tim; Niemöller, Ansgar; Meinke, Matthias; Schröder, Wolfgang - "Parallel Eulerian-Lagrangian coupling method on hierarchical meshes" - Journal of computational physics - vol 521 no Part 1 content/page 113509 - [doi:10.1016/j.jcp.2024.113509](https://doi.org/10.1016/j.jcp.2024.113509)

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Hübenthal, Fabian; Meinke, Matthias; Schröder, Wolfgang - "Surrogate Modeling for Active Drag Reduction in Turbulent Boundary Layer Flows Using Multitask Gaussian Process Regression" - Proceedings in applied mathematics and mechanics : PAMM - vol 24 no 4 content/page e202400186 - [doi:10.1002/pamm.202400186](https://doi.org/10.1002/pamm.202400186)

Tchoupe Sambou, Elio; Lauwers, Daniel; Petersen, Timm; Herrig, Tim; Klink, Andreas; Meinke, Matthias; Schröder, Wolfgang - "Investigating Workpiece Deflection in Precise Electrochemical Machining of Turbine Blades" - Journal of manufacturing and materials processing - vol 8 no 4 content/page 138 - [doi:10.3390/jmmp8040138](https://doi.org/10.3390/jmmp8040138)

Liu, Xin; Rüttgers, Mario; Quercia, Alessio; Egele, Romain; Pfaehler, Elisabeth; Shende, Rushikesh; Aach, Marcel; Schröder, Wolfgang; Balaprakash, Prasanna; Lintermann, Andreas - "Refining computer tomography data with super-resolution networks to increase the accuracy of respiratory flow simulations" - Future generation computer systems - vol 159 content/page 474-488 - [doi:10.1016/j.future.2024.05.020](https://doi.org/10.1016/j.future.2024.05.020)

Lagemann, Esther; Brunton, Steven L.; Schröder, Wolfgang; Lagemann, Christian - "Towards extending the aircraft flight envelope by mitigating transonic airfoil buffet" - Nature Communications - vol 15 content/page 5020 - [doi:10.1038/s41467-024-49361-3](https://doi.org/10.1038/s41467-024-49361-3)

Hösgen, Thomas; Meinke, Matthias; Schröder, Wolfgang - "Analysis of Ingress Into the Downstream Wheel Space of a 1.5-Stage Turbine By Full Circumference and Single Blade Passage Large-Eddy Simulations" - Journal of turbomachinery - vol 146 no 9 content/page 091006 - [doi:10.1115/1.4065129](https://doi.org/10.1115/1.4065129)

Rüttgers, Mario; Waldmann, Moritz; Vogt, Klaus; Ilgner, Justus Friedrich Rudolf; Schröder, Wolfgang; Lintermann, Andreas - "Automated surgery planning for an obstructed nose by combining computational fluid dynamics with reinforcement learning" - Computers in biology and medicine - vol 173 content/page 108383 - [doi:10.1016/j.compbiomed.2024.108383](https://doi.org/10.1016/j.compbiomed.2024.108383)

Hösgen, Thomas; Meinke, Matthias; Schröder, Wolfgang - "Analysis of single-blade passage and full circumference large-eddy simulations of turbine rim seal flows" - Journal of turbomachinery - vol 146 no 4 content/page 041002 - [doi:10.1115/1.4064086](https://doi.org/10.1115/1.4064086)

Wegmann, Tim; Meinke, Matthias; Fleischmann, Maximilian; Pischinger, Stefan; Schröder, Wolfgang - "Numerical Analysis of Mixing of Bio-Hybrid Fuels in a Direct Injection Engine with a Pre-Chamber Ignition System" - SAE technical paper - vol 2024-01-2619 content/page 1-16 - [doi:10.4271/2024-01-2619](https://doi.org/10.4271/2024-01-2619)

Lürkens, Thomas; Meinke, Matthias; Schröder, Wolfgang - "Impact of 2D engine nacelle flow on buffet" - CEAS Aeronautical Journal - vol 15 no 1 content/page 23-35 - [doi:10.1007/s13272-024-00728-8](https://doi.org/10.1007/s13272-024-00728-8)

Albers, Marian; Shao, Xiao; Schröder, Wolfgang - "Energy efficient actuated drag reduced compressible turbulent flat plate flow" - The international journal of heat and fluid flow - vol 106 content/page 109314 - [doi:10.1016/j.ijheatfluidflow.2024.109314](https://doi.org/10.1016/j.ijheatfluidflow.2024.109314)

Lagemann, Christian; Lagemann, Kai; Mukherjee, Sach; Schröder, Wolfgang - "Challenges of deep unsupervised optical flow estimation for particle-image velocimetry data" - Experiments in fluids - vol 65 no 3 content/page 30 - [doi:10.1007/s00348-024-03768-2](https://doi.org/10.1007/s00348-024-03768-2)

Lagemann, Esther; Albers, Marian; Lagemann, Christian; Schröder, Wolfgang - "Impact of Reynolds Number on the Drag Reduction Mechanism of Spanwise Travelling Surface Waves" - Flow, turbulence and combustion - vol 113 no 1 content/page 27-40 - [doi:10.1007/s10494-023-00507-1](https://doi.org/10.1007/s10494-023-00507-1)

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Tchoupe Sambou, Elio; Lauwers, Daniel; Herrig, Tim; Klink, Andreas; Meinke, Matthias; Klaas, Michael; Schröder, Wolfgang - "Optical in Situ Analysis of Gas Bubble Evolution in Electrochemical Machining Based on Similarity Theory Using Particle Image Velocimetry" - Procedia CIRP - vol 117 content/page 257-262

Hübenthal, Fabian; Albers, Marian; Meinke, Matthias; Schröder, Wolfgang - "Surrogate-based optimization for active drag reduction of turbulent boundary layer flows" - Proceedings in applied mathematics and mechanics : PAMM - vol 23 no 4 content/page e202300190 - [doi:10.1002/pamm.202300190](https://doi.org/10.1002/pamm.202300190)

Herff, S.; Pausch, K.; Lintermann, A.; Schröder, Wolfgang - "Impact of the injector lateral offset on the dynamics of a lean premixed flame and the thermoacoustic stability of a burner" - Combustion and flame - vol 256 content/page 112995 -

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Dreier, Christian Georg; Vogt, Xenia; Schröder, Wolfgang; Vorländer, Michael - "Acoustic source characterization of simulated subsonic jet noise using spherical harmonics" - The journal of the Acoustical Society of America - vol 154 no 1 content/page 167-178 - [doi:10.1121/10.0020065](https://doi.org/10.1121/10.0020065)

Tchoupe Sambou, Elio; Lauwers, Daniel; Heidemanns, Lukas Franz; Herrig, Tim; Klink, Andreas; Meinke, Matthias; Klaas, Michael; Schröder, Wolfgang - "Optical in Situ Analysis of Gas Bubble Evolution in Electrochemical Machining Based on Similarity Theory Using Particle Image Velocimetry" - Procedia CIRP - vol 117 content/page 257-262 - [doi:10.1016/j.procir.2023.03.044](https://doi.org/10.1016/j.procir.2023.03.044)

Wegmann, Tim; Meinke, Matthias; Schröder, Wolfgang - "Numerical Analyses of Spray Penetration and Evaporation in a Direct Injection Engine" - SAE technical papers - vol 2023-01-0310 content/page 16 Seiten - [doi:10.4271/2023-01-0310](https://doi.org/10.4271/2023-01-0310)

Mäteling, Esther; Albers, Marian; Schröder, Wolfgang - "How spanwise travelling transversal surface waves change the near-wall flow" - Journal of fluid mechanics - vol 957 content/page A30 - [doi:10.1017/jfm.2023.54](https://doi.org/10.1017/jfm.2023.54)

Gondrum, Miro; Satcunanathan, Sutharsan; Niemöller, Ansgar; Meinke, Matthias; Schröder, Wolfgang - "A direct-hybrid CFD/CAA method based on lattice Boltzmann and acoustic perturbation equations" - Acta Acustica - vol 7 content/page 5 - [doi:10.1051/aacus/2022062](https://doi.org/10.1051/aacus/2022062)

Zamponi, R.; Satcunanathan, S.; Moreau, S.; Meinke, Matthias; Schröder, Wolfgang; Schram, C. - "Effect of porosity on Curle's dipolar sources on an aerofoil in turbulent flow" - Journal of sound and vibration - vol 542 content/page 117353 - [doi:10.1016/j.jsv.2022.117353](https://doi.org/10.1016/j.jsv.2022.117353)

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Li, Wenfeng; Peng, Shenghong; Xi, Hengdong; Schröder, Wolfgang - "Experimental investigation on the degradation of turbulent friction drag reduction over semi-circular riblets" - Experiments in fluids - vol 63 no 12 content/page 190 - [doi:10.1007/s00348-022-03534-2](https://doi.org/10.1007/s00348-022-03534-2)

Tchoupe Sambou, Elio; Heidemanns, Lukas Franz; Klink, Andreas; Herrig, Tim; Klaas, Michael; Lauwers, Daniel; Schröder, Wolfgang - "Experimental setup for the investigation of the transport of different gas bubble sizes during electrochemical machining based on similarity theory using particle image velocimetry" - Procedia CIRP - vol 113 content/page 417-421 - [doi:10.1016/j.procir.2022.09.193](https://doi.org/10.1016/j.procir.2022.09.193)

Schier, Christina; Foerster, Jana; Heupel, Monika; Dörner, Philipp-Karim; Klaas, Michael; Schröder, Wolfgang; Rink, Lothar; Slusarenko, Alan; Gruhlke, Martin C. H. - "Allicin as a Volatile or Nebulisable Antimycotic for the Treatment of Pulmonary Mycoses : In Vitro Studies Using a Lung Flow Test Rig" - International journal of molecular sciences - vol 23 no 12 content/page 6607 - [doi:10.3390/ijms23126607](https://doi.org/10.3390/ijms23126607)

Waldmann, Moritz; Rüttgers, Mario; Lintermann, Andreas; Schröder, Wolfgang - "Virtual Surgeries of Nasal Cavities Using a Coupled Lattice-Boltzmann-Level-Set Approach" - Journal of engineering and science in medical diagnostics and therapy - vol 5 no 3 content/page 031104 - [doi:10.1115/1.4054042](https://doi.org/10.1115/1.4054042)

Lagemann, Christian; Lagemann, Kai; Mukherjee, Sach; Schröder, Wolfgang - "Generalization of deep recurrent optical flow estimation for particle-image velocimetry data" - Measurement science and technology - vol 33 no 9 content/page 094003 - [doi:10.1088/1361-6501/ac73db](https://doi.org/10.1088/1361-6501/ac73db)

Frotscher, Ophelia; Schaarschmidt, Ingo; Lauwers, Daniel; Paul, Raphael; Meinke, Matthias; Steinert, Philipp; Schubert, Andreas; Schröder, Wolfgang; Richter, Markus - "Investigation of Lorentz force-induced flow of NaNO<sub>3</sub>-electrolyte for magnetic field-assisted electrochemical machining" - The international journal of advanced manufacturing technology - vol 121 no 1/2 content/page 937-947 - [doi:10.1007/s00170-022-09349-z](https://doi.org/10.1007/s00170-022-09349-z)

Akermann, Kevin; Renze, Peter; Schröder, Wolfgang - "Large-eddy simulation for solid particle transport and deposition in a helically rib-roughened pipe using an Euler-Lagrange approach" - Chemical engineering science - vol 253 content/page 117557 - [doi:10.1016/j.ces.2022.117557](https://doi.org/10.1016/j.ces.2022.117557)

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Mäteling, Esther; Schröder, Wolfgang - "Analysis of spatiotemporal inner-outer large-scale interactions in turbulent channel flow by multivariate empirical mode decomposition" - Physical review fluids - vol 7 no 3 content/page 034603 - [doi:10.1103/PhysRevFluids.7.034603](https://doi.org/10.1103/PhysRevFluids.7.034603)

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Rüttgers, Mario; Waldmann, Moritz; Schröder, Wolfgang; Lintermann, Andreas - "A machine-learning-based method for automatizing lattice-Boltzmann simulations of respiratory flows" - Applied intelligence - vol 92 no 8 content/page 9080-9100 - [doi:10.1007/s10489-021-02808-2](https://doi.org/10.1007/s10489-021-02808-2)

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Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Analysis of Cyclic Variation Using Time-Resolved Tomographic Particle-Image Velocimetry" - SAE Powertrains, Fuels & Lubricants Meeting - vol 3 no 1 content/page 113-136 - [doi:10.4271/2020-01-2021](https://doi.org/10.4271/2020-01-2021)

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Berger, Ralf; Apel, Markus; Laschet, Gottfried; Jessen, Wilhelm; Schröder, Wolfgang; Wipperfürth, Jens; Austermann, Johannes; Hopmann, Christian - "Permeability Measurements of 3D Microstructures Generated by Phase Field Simulation of the Solidification of an Al-Si Alloy during Chill Casting" - Metals : open access journal - vol 11 no 12 content/page 1895 - [doi:10.3390/met11121895](https://doi.org/10.3390/met11121895)

Rommes, Bob; Lauwers, Daniel; Herrig, Tim; Meinke, Matthias; Schröder, Wolfgang; Klink, Andreas - "Concept for the experimental and numerical study of fluid-structure interaction and gas transport in Precise Electrochemical Machining" - Procedia CIRP - vol 102 content/page 204-209

Aljawad, Hussein; Rüttgers, Mario; Lintermann, Andreas; Schröder, Wolfgang; Lee, Kyungmin Clara - "Effects of the Nasal Cavity Complexity on the Pharyngeal Airway Fluid Mechanics: A Computational Study" - Journal of digital imaging - vol 34 no 5 content/page 1120-1133 - [doi:10.1007/s10278-021-00501-x](https://doi.org/10.1007/s10278-021-00501-x)

Lagemann, Christian; Lagemann, Kai; Mukherjee, Sach; Schröder, Wolfgang - "Deep recurrent optical flow learning for particle image velocimetry data" - Nature machine intelligence - vol 3 no 7 content/page 641-651 - [doi:10.1038/s42256-021-00369-0](https://doi.org/10.1038/s42256-021-00369-0)

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Marten, David; Paschereit, Christian O.; Huang, Xu; Meinke, Matthias; Schröder, Wolfgang; Müller, Jens; Oberleithner, Kilian - "Predicting Wind Turbine Wake Breakdown Using a Free Vortex Wake Code" - AIAA journal - vol 58 no 11 content/page 4672-4685 - [doi:10.2514/1.j058308](https://doi.org/10.2514/1.j058308)

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