

# Journal Papers (Excerpt)

## 2024

Tchoupe Sambou, Hermann 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)

## 2023

Tchoupe Sambou, Hermann 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 - [doi:10.1016/j.combustflame.2023.112995](https://doi.org/10.1016/j.combustflame.2023.112995)

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, Hermann 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)

## 2022

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, Hermann 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)

Kiwitt, Thede; Fröhlich, Konstantin; Meinke, Matthias; Schröder, Wolfgang - "Nusselt correlation for ellipsoidal particles" - International journal of multiphase flow - vol 149 content/page 103941 - [doi:10.1016/j.ijmultiphaseflow.2021.103941](https://doi.org/10.1016/j.ijmultiphaseflow.2021.103941)

Satcunanathan, Sutharsan; Meinke, Matthias; Schröder, Wolfgang - "Impact of Porous Media on Boundary Layer Turbulence" - Fluids - vol 7 no 4 content/page 139 - [doi:10.3390/fluids7040139](https://doi.org/10.3390/fluids7040139)

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)

Herff, Sohel; Pausch, Konrad; Meinke, Matthias; Schröder, Wolfgang - "Analysis of the sound sources of lean premixed methane–air flames" - GAMM-Mitteilungen - vol 45 no 1 content/page 20 - [doi:10.1002/gamm.202200001](https://doi.org/10.1002/gamm.202200001)

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)

Herff, Sohel Sebastian; Pausch, K.; Loosen, Simon André; Schröder, Wolfgang - "Impact of non-symmetric confinement on the flame dynamics of a lean-premixed swirl flame" - Combustion and flame - vol 235 content/page 111701 - [doi:10.1016/j.combustflame.2021.111701](https://doi.org/10.1016/j.combustflame.2021.111701)

## 2021

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)

Waldmann, Moritz; Grosch, Alice; Witzler, Christian; Lehner, Matthias; Benda, Odo; Koch, Walter; Vogt, Klaus; Kohn, Christopher; Schröder, Wolfgang; Göbber, Jens Henrik; Lintermann, Andreas - "An effective simulation- and measurement-based workflow for enhanced diagnostics in rhinology" - Medical & biological engineering & computing - vol 60 no 2 content/page 365-391 - [doi:10.1007/s11517-021-02446-3](https://doi.org/10.1007/s11517-021-02446-3)

Berger, Ralf; Apel, Markus; Laschet, Gottfried; Jessen, Wilhelm; Schröder, Wolfgang; Wipperfurth, 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)

Fröhlich, Konstantin; Farmand, Pooria; Pitsch, Heinz; Meinke, Matthias; Schröder, Wolfgang - "Particle Reynolds number effects on settling ellipsoids in isotropic turbulence" - International journal of multiphase flow - vol 139 content/page 103566 - [doi:10.1016/j.ijmultiphaseflow.2021.103566](https://doi.org/10.1016/j.ijmultiphaseflow.2021.103566)

Cheng, X. Q.; Wong, C. W.; Hussain, F.; Schröder, Wolfgang; Zhou, Y. - "Flat plate drag reduction using plasma-generated streamwise vortices" - Journal of fluid mechanics - vol 918 content/page A24 - [doi:10.1017/jfm.2021.311](https://doi.org/10.1017/jfm.2021.311)

Herff, Sohel Sebastian; Niemöller, Ansgar; Meinke, Matthias; Schröder, Wolfgang - "LES of a turbulent swirl flame using a mesh adaptive level-set method with dynamic load balancing" - Computers & fluids - vol 221 content/page 104900 - [doi:10.1016/j.compfluid.2021.104900](https://doi.org/10.1016/j.compfluid.2021.104900)

Dörner, Philipp-Karim; Schröder, Wolfgang; Klaas, Michael - "Experimental quantification of oscillating flow in finite-length straight elastic vessels for Newtonian and non-Newtonian fluids" - European journal of mechanics / B - vol 87 content/page 180-195 - [doi:10.1016/j.euromechflu.2021.02.001](https://doi.org/10.1016/j.euromechflu.2021.02.001)

Feldhusen-Hoffmann, Antje; Lagemann, Christian; Loosen, Simon André; Meysonnat, Pascal; Klaas, Michael; Schröder, Wolfgang - "Analysis of transonic buffet using dynamic mode decomposition" - Experiments in fluids - vol 62 no 4 content/page 66 - [doi:10.1007/s00348-020-03111-5](https://doi.org/10.1007/s00348-020-03111-5)

Brito Gadeschi, Gonzalo; Schilden, Thomas; Albers, Marian; Vorspohl, Julian; Meinke, Matthias; Schröder, Wolfgang - "Direct particle-fluid simulation of flushing flow in electrical discharge machining" - Engineering applications of computational fluid mechanics - vol 15 no 1 content/page 328-343 - [doi:10.1080/19942060.2021.1877198](https://doi.org/10.1080/19942060.2021.1877198)

Albers, Marian; Schröder, Wolfgang - "Lower drag and higher lift for turbulent airfoil flow by moving surfaces" - The international journal of heat and fluid flow - vol 88 content/page 108770 - [doi:10.1016/j.ijheatfluidflow.2020.108770](https://doi.org/10.1016/j.ijheatfluidflow.2020.108770)

Herty, Michael; Hüser, Jonathan; Naumann, Uwe; Schilden, Thomas; Schröder, Wolfgang - "Algorithmic differentiation of hyperbolic flow problems" - Journal of computational physics - vol 430 content/page 110110 - [doi:10.1016/j.jcp.2021.110110](https://doi.org/10.1016/j.jcp.2021.110110)

## 2020

Thönnißen, Frederik; Fritz, E. K.; Schröder, Wolfgang - "Acceleration of vortex-particle simulations using a pseudo-particle method" - Journal of Physics / Conference Series - vol 1618: The Science of Making Torque from Wind (TORQUE 2020) 28 September – 2 October 2020, The Netherlands (online) no 5 content/page 052006 - [doi:10.1088/1742-6596/1618/5/052006](https://doi.org/10.1088/1742-6596/1618/5/052006)

Vorspohl, Julian; Frerichs, Friedhelm; Schneider, Sebastian; Meinke, Matthias; Schröder, Wolfgang; Lübber, Thomas; Klink, Andreas - "Determination of residual stresses in processes with multiple thermal loads" - Procedia CIRP - vol 87 content/page 509-514

Vorspohl, Julian; Frerichs, Friedhelm; Schneider, Sebastian; Meinke, Matthias; Schröder, Wolfgang; Lübber, Thomas; Klink, Andreas - "Determination of residual stresses in processes with multiple thermal loads" - Procedia CIRP - vol 87 content/page 509-514 - [doi:10.1016/j.procir.2020.02.066](https://doi.org/10.1016/j.procir.2020.02.066)

Hösgen, Thomas; Meinke, Matthias; Schröder, Wolfgang - "Large-Eddy Simulations of Rim Seal Flow in a One-Stage Axial

Turbine" - Journal of the Global Power and Propulsion Society - vol 4 content/page 309-321 - [doi:10.33737/jgpps/129704](https://doi.org/10.33737/jgpps/129704)

Berger, Sven Christian; Wegmann, Tim; Meinke, Matthias; Schröder, Wolfgang - "Large-Eddy Simulation Study of Biofuel Injection in an Optical Direct Injection Engine" - SAE technical paper - vol 2020-01-2121 content/page [1]-18 - [doi:10.4271/2020-01-2121](https://doi.org/10.4271/2020-01-2121)

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)

Mäteling, Esther; Klaas, Michael; Schröder, Wolfgang - "Detection of small-scale/large-scale interactions in turbulent wall-bounded flows" - Physical review fluids - vol 5 no 11 content/page 114610 - [doi:10.1103/PhysRevFluids.5.114610](https://doi.org/10.1103/PhysRevFluids.5.114610)

Herff, Sohel Sebastian; Pausch, Konrad Stefan; Nawroth, H.; Schlimpert, S.; Paschereit, C. O.; Schröder, Wolfgang - "Impact of burner plenum acoustics on the sound emission of a turbulent lean premixed open flame" - International journal of spray and combustion dynamics - vol 12 content/page [1]-20 - [doi:10.1177/1756827720956906](https://doi.org/10.1177/1756827720956906)

Zamponi, R.; Satcunanathan, S.; Moreau, S.; Ragni, D.; Meinke, Matthias; Schröder, Wolfgang; Schram, C. - "On the role of turbulence distortion on leading-edge noise reduction by means of porosity" - Journal of sound and vibration - vol 485 content/page 115561 - [doi:10.1016/j.jsv.2020.115561](https://doi.org/10.1016/j.jsv.2020.115561)

Alavi Moghadam, Seyed Mohsen; Loosen, Simon André; Meinke, Matthias; Schröder, Wolfgang - "Reduced-order analysis of the acoustic near field of a ducted axial fan" - The international journal of heat and fluid flow - vol 85 content/page 108657 - [doi:10.1016/j.ijheatfluidflow.2020.108657](https://doi.org/10.1016/j.ijheatfluidflow.2020.108657)

Fröhlich, Konstantin; Meinke, Matthias; Schröder, Wolfgang - "Correlations for inclined prolates based on highly resolved simulations" - Journal of fluid mechanics - vol 901 content/page A5 - [doi:10.1017/jfm.2020.482](https://doi.org/10.1017/jfm.2020.482)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of the turbulent Schmidt number in supersonic film cooling with shock interaction" - Experiments in fluids - vol 61 no 7 content/page 160 - [doi:10.1007/s00348-020-02983-x](https://doi.org/10.1007/s00348-020-02983-x)

Huang, Xu; Albers, Marian; Meysonnat, Pascal; Meinke, Matthias; Schröder, Wolfgang - "Analysis of the effect of freestream turbulence on dynamic stall of wind turbine blades" - The international journal of heat and fluid flow - vol 85 content/page 108668 - [doi:10.1016/j.ijheatfluidflow.2020.108668](https://doi.org/10.1016/j.ijheatfluidflow.2020.108668)

Fernex, Daniel; Semaan, Richard; Albers, Marian; Meysonnat, Pascal; Schröder, Wolfgang; Noack, Bernd R. - "Actuation response model from sparse data for wall turbulence drag reduction" - Physical review fluids - vol 5 no 7 content/page 073901 - [doi:10.1103/PhysRevFluids.5.073901](https://doi.org/10.1103/PhysRevFluids.5.073901)

Albers, Marian; Schröder, Wolfgang - "Drag reduction for swept flat plate flow" - Physical review fluids - vol 5 no 6 content/page 064611 - [doi:10.1103/PhysRevFluids.5.064611](https://doi.org/10.1103/PhysRevFluids.5.064611)

Schilden, Thomas; Pogorelov, Alexej; Herff, Sohel Sebastian; Schröder, Wolfgang - "Microroughness-induced disturbances in supersonic blunt body flow" - Physical review fluids - vol 5 no 6 content/page 063903 - [doi:10.1103/PhysRevFluids.5.063903](https://doi.org/10.1103/PhysRevFluids.5.063903)

Akermann, Kevin; Renze, Peter; Dietl, Jochen; Schröder, Wolfgang - "Large-Eddy Simulation of turbulent heat transfer in a multiple-started helically rib-roughened pipe" - International journal of heat and mass transfer - vol 154 content/page 119667 - [doi:10.1016/j.ijheatmasstransfer.2020.119667](https://doi.org/10.1016/j.ijheatmasstransfer.2020.119667)

Müllner, Markus; Schröder, Wolfgang - "A novel solution method for unsteady incompressible Euler flow using the vorticity-Bernoulli-pressure formulation" - Journal of computational physics - vol 413 content/page 109462 - [doi:10.1016/j.jcp.2020.109462](https://doi.org/10.1016/j.jcp.2020.109462)

Mäteling, Esther; Klaas, Michael; Schröder, Wolfgang - "Simultaneous Stereo PIV and MPS3 Wall-Shear Stress Measurements in Turbulent Channel Flow" - Optics - vol 1 no 1 content/page 40-51 - [doi:10.3390/opt1010004](https://doi.org/10.3390/opt1010004)

Rubbert, Ernst Rolf Alexander; Schröder, Wolfgang - "Iterative particle matching for three-dimensional particle-tracking velocimetry" - Experiments in fluids - vol 61 no 2 content/page 58 - [doi:10.1007/s00348-020-2891-2](https://doi.org/10.1007/s00348-020-2891-2)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Comparison of Shock/Cooling-Film Interaction for Cooled and Isoenergetic Injection" - AIAA journal - vol 58 no 5 content/page 2078-2092 - [doi:10.2514/1.j058471](https://doi.org/10.2514/1.j058471)

Dörner, Philipp-Karim; Müller, Philipp M.; Reiter, Jana; Gruhlke, Martin C. H.; Slusarenko, Alan; Schröder, Wolfgang; Klass, Michael - "Feasibility study of a surface-coated lung model to quantify active agent deposition for preclinical studies" - Clinical biomechanics - vol 76 content/page 105029 - [doi:10.1016/j.clinbiomech.2020.105029](https://doi.org/10.1016/j.clinbiomech.2020.105029)

Lintermann, Andreas; Meinke, Matthias; Schröder, Wolfgang - "Zonal Flow Solver (ZFS): a highly efficient multi-physics simulation framework" - International journal of computational fluid dynamics - content/page 1-28 - [doi:10.1080/10618562.2020.1742328](https://doi.org/10.1080/10618562.2020.1742328)

Pausch, Konrad; Herff, Sohel Sebastian; Schröder, Wolfgang - "Noise sources of an unconfined and a confined swirl burner" - Journal of sound and vibration : JSV - vol 475 content/page 115293 - [doi:10.1016/j.jsv.2020.115293](https://doi.org/10.1016/j.jsv.2020.115293)

Albers, Marian; Meysonnat, Pascal; Fernex, Daniel; Semaan, Richard; Noack, Bernd R.; Schröder, Wolfgang - "Drag Reduction and Energy Saving by Spanwise Traveling Transversal Surface Waves for Flat Plate Flow" - Flow, turbulence and combustion - vol 105 no 1 content/page 125-157 - [doi:10.1007/s10494-020-00110-8](https://doi.org/10.1007/s10494-020-00110-8)

Niemöller, Ansgar; Schlottke-Lakemper, Michael Alexander; Meinke, Matthias; Schröder, Wolfgang - "Dynamic load balancing for direct-coupled multiphysics simulations" - Computers & fluids - vol 199 content/page 104437 - [doi:10.1016/j.compfluid.2020.104437](https://doi.org/10.1016/j.compfluid.2020.104437)

Geiser, Georg; Schröder, Wolfgang - "Structured multi-block grid partitioning using balanced cut trees" - Journal of parallel and distributed computing - vol 138 content/page 139-152 - [doi:10.1016/j.jpdc.2019.12.010](https://doi.org/10.1016/j.jpdc.2019.12.010)

Loosen, Simon André; Meinke, Matthias; Schröder, Wolfgang - "Numerical Investigation of Jet-Wake Interaction for a Dual-Bell Nozzle" - Flow, turbulence and combustion - vol 104 no 2/3 content/page 553-578 - [doi:10.1007/s10494-019-00056-6](https://doi.org/10.1007/s10494-019-00056-6)

Li, Wenfeng; Roggenkamp, Dorothee; Paakkari, Ville; Klaas, Michael; Soria, Julio; Schröder, Wolfgang - "Analysis of a drag reduced flat plate turbulent boundary layer via uniform momentum zones" - Aerospace science and technology - vol 96 content/page 105552 - [doi:10.1016/j.ast.2019.105552](https://doi.org/10.1016/j.ast.2019.105552)

Reiter, Jana; Borlinghaus, Jan; Dörner, Philipp-Karim; Schröder, Wolfgang; Gruhlke, Martin C. H.; Klaas, Michael; Slusarenko, Alan - "Investigation of the deposition behaviour and antibacterial effectivity of allicin aerosols and vapour using a lung model" - Experimental and Therapeutic Medicine - vol 19 no 2 content/page 1541-1549 - [doi:10.3892/etm.2019.8387](https://doi.org/10.3892/etm.2019.8387)

## 2019

Fernex, Daniel; Semaan, Richard; Albers, Marian; Meysonnat, Pascal S.; Schröder, Wolfgang; Ishar, Rishabh; Kaiser, Eurika; Noack, Bernd R. - "Cluster-based network model for drag reduction mechanisms of an actuated turbulent boundary layer" - Proceedings in applied mathematics and mechanics : PAMM - vol 19 no 1 content/page e201900219 - [doi:10.1002/pamm.201900219](https://doi.org/10.1002/pamm.201900219)

Meysonnat, Pascal S.; Albers, Marian; Schröder, Wolfgang - "Drag Reduction of Transversal Surface Waves with Sweep Angle" - Proceedings in applied mathematics and mechanics : PAMM - [doi:10.1002/pamm.201900212](https://doi.org/10.1002/pamm.201900212)

Albers, Marian; Meysonnat, Pascal S.; Fernex, Daniel; Semaan, Richard; Noack, Bernd R.; Schröder, Wolfgang - "Parameter Study of Turbulent Drag Reduction by Spanwise Traveling Transversal Surface Waves" - Proceedings in applied mathematics and mechanics : PAMM - vol 19 no 1 - [doi:10.1002/pamm.201900178](https://doi.org/10.1002/pamm.201900178)

Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "High-speed 3D Measurements of the Influence of Intake Pressure on the In-Cylinder Flow in a DISI Engine" - SAE technical paper - vol 2019-01-2251 content/page 13 Seiten - [doi:10.4271/2019-01-2251](https://doi.org/10.4271/2019-01-2251)

Marquardt, Pascal; Klaas, Michael; Schröder, Wolfgang - "Experimental Investigation of Isoenergetic Film-Cooling Flows with Shock Interaction" - AIAA journal - vol 57 no 9 content/page 3910-3923 - [doi:10.2514/1.j058197](https://doi.org/10.2514/1.j058197)

Wellenberg, Sören; Marnett, Markus; Roidl, Benedikt; Kirkendall, Davis; Thönnißen, Frederik; Schröder, Wolfgang - "Assessment of a numerical design tool for pitching airfoils" - Wind engineering - vol 43 no 6 content/page 639-656 - [doi:10.1177/0309524X18821883](https://doi.org/10.1177/0309524X18821883)

Pausch, Konrad Stefan; Herff, Sohel Sebastian; Zhang, Feichi; Bockhorn, Henning; Schröder, Wolfgang - "Noise Sources of Lean Premixed Flames" - Flow, Turbulence and Combustion - vol 103 no 3 content/page 773-796 - [doi:10.1007/s10494-019-00032-0](https://doi.org/10.1007/s10494-019-00032-0)

Braun, Marco; Schröder, Wolfgang; Klaas, Michael - "High-speed tomographic PIV measurements in a DISI engine" - Experiments in fluids - vol 60 no 9 content/page 146 - [doi:10.1007/s00348-019-2792-4](https://doi.org/10.1007/s00348-019-2792-4)

Schneiders, Lennart; Fröhlich, Konstantin; Meinke, Matthias; Schröder, Wolfgang - "The decay of isotropic turbulence carrying non-spherical finite-size particles" - Journal of fluid mechanics - vol 875 content/page 520-542 - [doi:10.1017/jfm.2019.516](https://doi.org/10.1017/jfm.2019.516)

Ishar, Rishabh; Kaiser, Eurika; Morzyński, Marek; Fernex, Daniel; Semaan, Richard; Albers, Marian; Meysonnat, Pascal; Schröder, Wolfgang; Noack, Bernd R. - "Metric for attractor overlap" - Journal of fluid mechanics - vol 874 content/page 720-755 - [doi:10.1017/jfm.2019.447](https://doi.org/10.1017/jfm.2019.447)

Schlottke-Lakemper, Michael Alexander; Niemöller, Ansgar; Meinke, Matthias; Schröder, Wolfgang - "Efficient parallelization for volume-coupled multiphysics simulations on hierarchical Cartesian grids" - Computer methods in applied mechanics and engineering - vol 352 content/page 461-487 - [doi:10.1016/j.cma.2019.04.032](https://doi.org/10.1016/j.cma.2019.04.032)

Satcunanathan, Sutharsan; Meinke, Matthias; Schröder, Wolfgang - "Prediction of Noise Mitigation by Porous Media based on a Direct-Hybrid CFD/CAA Method" - AIAA paper - vol 2019-2696 content/page 15 pages - [doi:10.2514/6.2019-2696](https://doi.org/10.2514/6.2019-2696)

Niemöller, Ansgar; Meinke, Matthias; Schröder, Wolfgang; Albring, Tim A.; Gauger, Nicolas R. - "Noise Reduction Using a Direct-Hybrid CFD/CAA Method" - AIAA paper - vol 2019-2579 content/page 15 pages - [doi:10.2514/6.2019-2579](https://doi.org/10.2514/6.2019-2579)



- Liu, Yiou; Klaas, Michael; Schröder, Wolfgang - "Measurements of the wall-shear stress distribution in turbulent channel flow using the micro-pillar shear stress sensor MPS3" - Experimental thermal and fluid science - vol 106 content/page 171-182 - [doi:10.1016/j.expthermflusci.2019.04.022](https://doi.org/10.1016/j.expthermflusci.2019.04.022)
- Huang, Xianshu; Alavi Moghadam, Seyed Mohsen; Meysonnat, Pascal; Meinke, Matthias; Schröder, Wolfgang - "Numerical analysis of the effect of flaps on the tip vortex of a wind turbine blade" - The international journal of heat and fluid flow - vol 77 content/page 336-351 - [doi:10.1016/j.jheatfluidflow.2019.05.004](https://doi.org/10.1016/j.jheatfluidflow.2019.05.004)
- Albers, Marian; Meysonnat, Pascal; Schröder, Wolfgang - "Actively Reduced Airfoil Drag by Transversal Surface Waves" - Applied scientific research / B - vol 102 no 4 content/page 865-886 - [doi:10.1007/s10494-018-9998-z](https://doi.org/10.1007/s10494-018-9998-z)
- Alavi Moghadam, Seyed Mohsen; Meinke, Matthias; Schröder, Wolfgang - "Analysis of tip-leakage flow in an axial fan at varying tip-gap sizes and operating conditions" - Computers & fluids - vol 183 content/page 107-129 - [doi:10.1016/j.compfluid.2019.01.014](https://doi.org/10.1016/j.compfluid.2019.01.014)
- Roggenkamp, Dorothee; Li, Wenfeng; Klaas, Michael; Schröder, Wolfgang - "Influence of spanwise transversal surface wave on coherent structures in turbulent boundary layers" - Aerospace science and technology - vol 86 content/page 387-400 - [doi:10.1016/j.ast.2019.01.026](https://doi.org/10.1016/j.ast.2019.01.026)
- Duan, Lian; Choudhari, Meelan M.; Chou, Amanda; Munoz, Federico; Radespiel, Rolf; Schilden, Thomas; Schröder, Wolfgang; Marineau, Eric C.; Casper, Katya M.; Chaudhry, Ross S.; Candler, Graham V.; Gray, Kathryn A.; Schneider, Steven P. - "Characterization of Freestream Disturbances in Conventional Hypersonic Wind Tunnels" - Journal of spacecraft and rockets - vol 56 no 2 content/page 357-368 - [doi:10.2514/1.A34290](https://doi.org/10.2514/1.A34290)
- Hein, Stefan; Theiss, Alexander; Di Giovanni, Antonio; Stemmer, Christian; Schilden, Thomas; Schröder, Wolfgang; Paredes, Pedro; Choudhari, Meelan M.; Li, Fei; Reshotko, Eli - "Numerical Investigation of Roughness Effects on Transition on Spherical Capsules" - Journal of spacecraft and rockets - vol 56 no 2 content/page 388-404 - [doi:10.2514/1.A34247](https://doi.org/10.2514/1.A34247)
- Rubbert, Ernst Rolf Alexander; Albers, Marian; Schröder, Wolfgang - "Streamline segment statistics propagation in inhomogeneous turbulence" - Physical review fluids - vol 4 no 3 content/page 034605 - [doi:10.1103/PhysRevFluids.4.034605](https://doi.org/10.1103/PhysRevFluids.4.034605)
- Schilden, Thomas; Schröder, Wolfgang - "Inclined slow acoustic waves incident to stagnation point probes in supersonic flow" - Journal of fluid mechanics - vol 866 content/page 567-597 - [doi:10.1017/jfm.2019.121](https://doi.org/10.1017/jfm.2019.121)
- Alavi Moghadam, Seyed Mohsen; Meinke, Matthias; Schröder, Wolfgang - "Numerical Analysis of the Acoustic Field of a Ducted Axial Fan at Varying Tip Clearances" - Acta acustica united with acustica - vol 105 no 1 content/page 43-55 - [doi:10.3813/AAA.919286](https://doi.org/10.3813/AAA.919286)
- Deolmi, Giulia; Müller, Siegfried; Albers, Marian; Meysonnat, Pascal; Schröder, Wolfgang - "A reduced order model to simulate compressible flows over an actuated riblet surface" - Applied mathematics and computation - vol 348 content/page 234-256 - [doi:10.1016/j.amc.2018.11.059](https://doi.org/10.1016/j.amc.2018.11.059)
- Lintermann, Andreas; Pleiter, Dirk; Schröder, Wolfgang - "Performance of ODROID-MC1 for scientific flow problems" - Future generation computer systems - vol 95 content/page 149-162 - [doi:10.1016/j.future.2018.12.059](https://doi.org/10.1016/j.future.2018.12.059)
- Lintermann, Andreas; Schröder, Wolfgang - "A Hierarchical Numerical Journey Through the Nasal Cavity: from Nose-Like Models to Real Anatomies" - Flow, turbulence and combustion - vol 102 no 1 content/page 89-116 - [doi:10.1007/s10494-017-9876-0](https://doi.org/10.1007/s10494-017-9876-0)

## 2018

- Pogorelov, Alexej; Meinke, Matthias; Schröder, Wolfgang - "Large-Eddy Simulation of the Unsteady Full 3D Rim Seal Flow in a One-Stage Axial-Flow Turbine" - Flow, turbulence and combustion - vol 101 no 1 content/page 189-220 - [doi:10.1007/s10494-018-9956-9](https://doi.org/10.1007/s10494-018-9956-9)
- Fröhlich, Konstantin; Schneiders, Lennart; Meinke, Matthias; Schröder, Wolfgang - "Validation of Lagrangian Two-Way Coupled Point-Particle Models in Large-Eddy Simulations" - Flow, turbulence and combustion - vol 101 no 2 content/page 317-341 - [doi:10.1007/s10494-018-9933-3](https://doi.org/10.1007/s10494-018-9933-3)
- Zhou, Beckett; Koh, Seong Ryong; Gauger, Nicolas R.; Meinke, Matthias; Schröder, Wolfgang - "A discrete adjoint framework for trailing-edge noise minimization via porous material" - Computers & fluids - vol 172 content/page 97-108 - [doi:10.1016/j.compfluid.2018.06.017](https://doi.org/10.1016/j.compfluid.2018.06.017)
- Cetin, Mehmet Onur; Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Computational analysis of exit conditions on the sound field of turbulent hot jets / Edited by Lutz Lesshafft, Peter Jordan, Anurag Agarwal" - Comptes rendus mécanique - vol 346 no 10 content/page 932-947 - [doi:10.1016/j.crme.2018.07.006](https://doi.org/10.1016/j.crme.2018.07.006)
- Deshmukh, Abhishek Yashwant; Falkenstein, Tobias; Pitsch, Heinz; Khosravi, Maziar; van Bebbler, David; Klaas, Michael; Schröder, Wolfgang - "Numerical Investigation of Direct Gas Injection in an Optical Internal Combustion Engine" - WCX World Congress Experience - vol 11 no 6 content/page 1447-1478 - [doi:10.4271/2018-01-0171](https://doi.org/10.4271/2018-01-0171)

Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Influence of Miller Cycles on Engine Air Flow" - SAE International journal of engines - vol 11 no 2 content/page 161-178 - [doi:10.4271/03-11-02-0011](https://doi.org/10.4271/03-11-02-0011)

Li, Wenfeng; Roggenkamp, Dorothee; Hecken, Tobias; Jessen, Wilhelm; Klaas, Michael; Schröder, Wolfgang - "Parametric investigation of friction drag reduction in turbulent flow over a flexible wall undergoing spanwise transversal traveling waves" - Experiments in fluids - vol 59 no 6 content/page 105 - [doi:10.1007/s00348-018-2559-3](https://doi.org/10.1007/s00348-018-2559-3)

Loosen, Simon André; Statnikov, Vladimir; Meinke, Matthias; Schröder, Wolfgang - "Modal analysis of passive flow control for the turbulent wake of a generic planar space launcher" - CEAS space journal - vol 10 no 2 content/page 189-202 - [doi:10.1007/s12567-017-0183-3](https://doi.org/10.1007/s12567-017-0183-3)

Koh, Seong Ryong; Zhou, Beckett Y.; Meinke, Matthias; Gauger, Nicolas Ralph; Schröder, Wolfgang - "Numerical Analysis of the Impact of Variable Porosity on Trailing-Edge Noise" - Computers & fluids - vol 132 content/page 43-48 - [doi:10.1016/j.compfluid.2018.02.015](https://doi.org/10.1016/j.compfluid.2018.02.015)

Feldhusen, Antje; Statnikov, Vladimir; Klaas, Michael; Schröder, Wolfgang - "Investigation of shock-acoustic-wave interaction in transonic flow" - Experiments in fluids - vol 59 no 1 content/page 15 - [doi:10.1007/s00348-017-2466-z](https://doi.org/10.1007/s00348-017-2466-z)

Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Numerical analysis of the impact of permeability on trailing-edge noise" - Journal of sound and vibration - vol 421 content/page 348-376 - [doi:10.1016/j.jsv.2018.02.017](https://doi.org/10.1016/j.jsv.2018.02.017)

Pogorelov, Alexej; Schneiders, Lennart; Meinke, Matthias; Schröder, Wolfgang - "An Adaptive Cartesian Mesh Based Method to Simulate Turbulent Flows of Multiple Rotating Surfaces" - Flow, turbulence and combustion - vol 100 no 1 content/page 19-38 - [doi:10.1007/s10494-017-9827-9](https://doi.org/10.1007/s10494-017-9827-9)

## 2017

Braun, Marco; Palmer, Johannes; van Overbrüggen, Timo; Klaas, Michael; Kneer, Reinhold; Schröder, Wolfgang - "Influence of In-Cylinder Air Flow on Spray Propagation" - SAE International journal of engines - vol 10 no 4 content/page 1398-1410 - [doi:10.4271/2017-01-9280](https://doi.org/10.4271/2017-01-9280)

Schilden, Thomas; Schröder, Wolfgang - "Numerical analysis of high speed wind tunnel flow disturbance measurements using stagnation point probes" - Journal of fluid mechanics - vol 833 content/page 247-273 - [doi:10.1017/jfm.2017.674](https://doi.org/10.1017/jfm.2017.674)

Cetin, Mehmet Onur; Meinke, Matthias; Schröder, Wolfgang - "Numerical analysis of the impact of exit conditions on low Mach number turbulent jets" - The international journal of heat and fluid flow - vol 67 no Part A content/page 1-12 - [doi:10.1016/j.ijheatfluidflow.2017.07.003](https://doi.org/10.1016/j.ijheatfluidflow.2017.07.003)

Brito Gadeschi, Gonzalo; Schneider, Sebastian; Mohammadnejad, Menoush; Meinke, Matthias; Klink, Andreas; Schröder, Wolfgang; Klocke, Fritz - "Numerical Analysis of Flushing-Induced Thermal Cooling Including Debris Transport in Electrical Discharge Machining (EDM)" - Procedia CIRP - vol 58 content/page 116-121 - [doi:10.1016/j.procir.2017.03.325](https://doi.org/10.1016/j.procir.2017.03.325)

Schneiders, Lennart; Meinke, Matthias; Schröder, Wolfgang - "On the accuracy of Lagrangian point-mass models for heavy non-spherical particles in isotropic turbulence" - Fuel : the science and technology of fuel and energy - vol 201 content/page 2-14 - [doi:10.1016/j.fuel.2016.11.096](https://doi.org/10.1016/j.fuel.2016.11.096)

Schneiders, Lennart; Meinke, Matthias; Schröder, Wolfgang - "Direct particle-fluid simulation of Kolmogorov-length-scale size particles in decaying isotropic turbulence" - Journal of fluid mechanics - vol 819 content/page 188-227 - [doi:10.1017/jfm.2017.171](https://doi.org/10.1017/jfm.2017.171)

Lintermann, Andreas; Schröder, Wolfgang - "Simulation of aerosol particle deposition in the upper human tracheobronchial tract" - European journal of mechanics / B - vol 63 content/page 73-89 - [doi:10.1016/j.euromechflu.2017.01.008](https://doi.org/10.1016/j.euromechflu.2017.01.008)

Statnikov, Vladimir; Meinke, Matthias; Schröder, Wolfgang - "Reduced-order analysis of buffet flow of space launchers" - Journal of fluid mechanics - vol 815 content/page 1-25 - [doi:10.1017/jfm.2017.46](https://doi.org/10.1017/jfm.2017.46)

Cetin, Mehmet Onur; Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Numerical Analysis of the Impact of the Interior Nozzle Geometry on Low Mach Number Jet Acoustics" - Flow, turbulence and combustion - vol 98 no 2 content/page 417-443 - [doi:10.1007/s10494-016-9764-z](https://doi.org/10.1007/s10494-016-9764-z)

Rubbert, Ernst Rolf Alexander; Hennig, F.; Klaas, Michael; Pitsch, Heinz; Schröder, Wolfgang; Peters, N. - "Streamline segment scaling behavior in a turbulent wavy channel flow" - Experiments in fluids - vol 58 no 2 content/page 10 - [doi:10.1007/s00348-016-2291-9](https://doi.org/10.1007/s00348-016-2291-9)

Schlottke-Lakemper, Michael Alexander; Yu, Hans; Berger, Sven Christian; Meinke, Matthias; Schröder, Wolfgang - "A fully coupled hybrid computational aeroacoustics method on hierarchical Cartesian meshes" - Computers & fluids - vol 144 content/page 137-153 - [doi:10.1016/j.compfluid.2016.12.001](https://doi.org/10.1016/j.compfluid.2016.12.001)

Schlimpert, S.; Koh, Seong Ryong; Pausch, K.; Meinke, Matthias; Schröder, Wolfgang - "Analysis of combustion noise of a turbulent premixed slot jet flame" - Combustion and flame - vol 175 content/page 292-306 - [doi:10.1016/j.combustflame.2016.08.001](https://doi.org/10.1016/j.combustflame.2016.08.001)

Gronarz, Tim; Schnell, Matthias; Siewert, Christoph; Schneiders, Lennart; Schröder, Wolfgang; Kneer, Reinhold - "Comparison of scattering behaviour for spherical and non-spherical particles in pulverized coal combustion" - International journal of thermal sciences : IJTS = Revue générale de thermique - vol 111 content/page 116-128 - [doi:10.1016/j.ijthermalsci.2016.08.014](https://doi.org/10.1016/j.ijthermalsci.2016.08.014)

## 2016

Li, Wenfeng; Roggenkamp, Dorothee; Jessen, Wilhelm; Klaas, Michael; Schröder, Wolfgang - "Reynolds number effects on the fluctuating velocity distribution in wall-bounded shear layers" - Measurement science and technology - vol 28 no 1 content/page 015302 - [doi:10.1088/1361-6501/aa4e9e](https://doi.org/10.1088/1361-6501/aa4e9e)

Thönnißen, Frederik; Marnett, Markus; Roidl, B.; Schröder, Wolfgang - "A numerical analysis to evaluate Betz's Law for vertical axis wind turbines" - Journal of physics / Conference Series - vol 753 content/page 022056 - [doi:10.1088/1742-6596/753/2/022056](https://doi.org/10.1088/1742-6596/753/2/022056)

Albers, Marian; Meysonnat, Pascal S.; Schröder, Wolfgang - "Drag reduction via wall-normal oscillations in turbulent flat plate boundary layer flow at very high Reynolds number" - Proceedings in applied mathematics and mechanics : PAMM - vol 16 content/page 629-630 - [doi:10.1002/pamm.201610303](https://doi.org/10.1002/pamm.201610303)

Pausch, Konrad; Schlimpert, Stephan; Koh, Seong Ryong; Grimmen, Jerry H.; Schröder, Wolfgang - "The Effect of Flame Thickening on the Acoustic Emission in Turbulent Combustion" - AIAA journal - vol 2745 content/page 1-12 - [doi:10.2514/6.2016-2745](https://doi.org/10.2514/6.2016-2745)

Yu, Jiangang; Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Noise Reduction via Jet Injection near the Trailing Edge" - AIAA paper - vol 2831 content/page 2013-2028 - [doi:10.2514/6.2016-2831](https://doi.org/10.2514/6.2016-2831)

Statnikov, Vladimir; Roidl, Benedikt; Meinke, Matthias; Schröder, Wolfgang - "Analysis of spatio-temporal wake modes of space launchers at transonic flow" - AIAA paper - vol 1116 content/page 9850-9861 - [doi:10.2514/6.2016-1116](https://doi.org/10.2514/6.2016-1116)

Pogorelov, Alexej; Meinke, Matthias; Schröder, Wolfgang - "Impact of periodic boundary conditions on the flow field in an axial fan" - AIAA paper - vol 610 content/page 5782-5794 - [doi:10.2514/6.2016-0610](https://doi.org/10.2514/6.2016-0610)

Winzen, A.; Roidl, Benedikt; Schröder, Wolfgang - "Combined particle-image velocimetry and force analysis of the three-dimensional fluid-structure interaction of a natural owl wing" - Bioinspiration & biomimetics - vol 11 no 2 content/page 1-12 - [doi:10.1088/1748-3190/11/2/026005](https://doi.org/10.1088/1748-3190/11/2/026005)

Wagner, Hermann; Weger, Matthias; Klaas, Michael; Schröder, Wolfgang - "Features of owl wings that promote silent flight" - Interface focus - vol 7 no 1 content/page 20160078 - [doi:10.1098/rsfs.2016.0078](https://doi.org/10.1098/rsfs.2016.0078)

Statnikov, Vladimir; Stephan, S.; Pausch, K.; Meinke, Matthias; Radespiel, R.; Schröder, Wolfgang - "Experimental and numerical investigations of the turbulent wake flow of a generic space launcher at  $M=3$  and  $M=6$ " - CEAS space journal - vol 8 no 2 content/page 101-116 - [doi:10.1007/s12567-016-0112-x](https://doi.org/10.1007/s12567-016-0112-x)

Pogorelov, Alexej; Meinke, Matthias; Schröder, Wolfgang - "Effects of tip-gap width on the flow field in an axial fan" - The international journal of heat and fluid flow - vol 61 no Part B content/page 466-481 - [doi:10.1016/j.ijheatfluidflow.2016.06.009](https://doi.org/10.1016/j.ijheatfluidflow.2016.06.009)

Schilden, Thomas; Schröder, Wolfgang; Ali, Syed Raza Christopher; Schreyer, Anne-Marie; Wu, Jie; Radespiel, Rolf - "Analysis of acoustic and entropy disturbances in a hypersonic wind tunnel" - Physics of fluids - vol 28 no 5 content/page 056104 - [doi:10.1063/1.4948435](https://doi.org/10.1063/1.4948435)

Costantini, Marco; Hein, Stefan; Henne, Ulrich; Klein, Christian; Koch, Stefan; Schojda, Lukas; Ondrus, Vladimir; Schröder, Wolfgang - "Pressure Gradient and Nonadiabatic Surface Effects on Boundary Layer Transition" - AIAA journal - vol 54 no 11 content/page 3465-3480 - [doi:10.2514/1.j054583](https://doi.org/10.2514/1.j054583)

Cetin, Mehmet Onur; Pauz, Vitali; Meinke, Matthias; Schröder, Wolfgang - "Computational analysis of nozzle geometry variations for subsonic turbulent jets" - Computers & fluids - vol 136 content/page 467-484 - [doi:10.1016/j.compfluid.2016.05.033](https://doi.org/10.1016/j.compfluid.2016.05.033)

van Overbrüggen, Timo; Klaas, Michael; Soria, Julio; Schröder, Wolfgang - "Experimental analysis of particle sizes for PIV measurements" - Measurement science and technology - vol 27 no 9 content/page 094009 - [doi:10.1088/0957-0233/27/9/094009](https://doi.org/10.1088/0957-0233/27/9/094009)

Statnikov, Vladimir; Bolgar, I.; Scharnowski, S.; Meinke, Matthias; Kähler, C. J.; Schröder, Wolfgang - "Analysis of characteristic wake flow modes on a generic transonic backward-facing step configuration" - European journal of mechanics / B - vol 59 content/page 124-134 - [doi:10.1016/j.euromechflu.2016.05.008](https://doi.org/10.1016/j.euromechflu.2016.05.008)

van Overbrüggen, Timo; Braun, Marco; Klaas, Michael; Schröder, Wolfgang - "Experimental Analysis of the Impact of Injected Biofuels on In-Cylinder Flow Structures" - SAE International journal of engines - vol 9 no 2 content/page 2016-01-9043 - [doi:10.4271/2016-01-9043](https://doi.org/10.4271/2016-01-9043)

Schlimpert, Stephan; Meinke, Matthias; Schröder, Wolfgang - "Nonlinear analysis of an acoustically excited laminar premixed flame" - Combustion and flame - vol 163 content/page 337-357 - [doi:10.1016/j.combustflame.2015.09.035](https://doi.org/10.1016/j.combustflame.2015.09.035)



Schlimpert, S.; Feldhusen, A.; Grimmen, J. H.; Roidl, B.; Meinke, Matthias; Schröder, Wolfgang - "Hydrodynamic instability and shear layer effects in turbulent premixed combustion" - Physics of fluids - vol 28 no 1 content/page 017104 - [doi:10.1063/1.4940161](https://doi.org/10.1063/1.4940161)

Schneiders, Lennart; Günther, Claudia; Meinke, Matthias; Schröder, Wolfgang - "An efficient conservative cut-cell method for rigid bodies interacting with viscous compressible flows" - Journal of computational physics - vol 311 content/page 62-86 - [doi:10.1016/j.jcp.2016.01.026](https://doi.org/10.1016/j.jcp.2016.01.026)

Meysonnat, Pascal S.; Koh, Seong Ryong; Roidl, Benedikt; Schröder, Wolfgang - "Impact of transversal traveling surface waves in a non-zero pressure gradient turbulent boundary layer flow" - Applied mathematics and computation - vol 272 content/page 498-507 - [doi:10.1016/j.amc.2015.05.094](https://doi.org/10.1016/j.amc.2015.05.094)

## 2015

Brito Gadeschi, Gonzalo; Schneiders, Lennart; Meinke, Matthias; Schröder, Wolfgang - "A numerical method for multiphysics simulations based on hierarchical Cartesian grids" - Journal of fluid science and technology - vol 10 no 1 content/page JFST0002 - [doi:10.1299/jfst.2015jfst0002](https://doi.org/10.1299/jfst.2015jfst0002)

Roggenkamp, Dorothee; Jessen, Wilhelm; Li, Wenfeng; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of turbulent boundary layers over transversal moving surfaces" - CEAS Aeronautical Journal - vol 6 no 3 content/page 471-484 - [doi:10.1007/s13272-015-0155-2](https://doi.org/10.1007/s13272-015-0155-2)

Winzen, A.; Roidl, B.; Schröder, Wolfgang - "Particle-image velocimetry investigation of the fluid-structure interaction mechanisms of a natural owl wing" - Bioinspiration & Biomimetics - vol 10 no 5 content/page 056009 - [doi:10.1088/1748-3190/10/5/056009](https://doi.org/10.1088/1748-3190/10/5/056009)

Schneiders, Lennart; Grimmen, Jerry H.; Meinke, Matthias; Schröder, Wolfgang - "An efficient numerical method for fully-resolved particle simulations on high-performance computers" - Proceedings in applied mathematics and mechanics : PAMM - vol 15 no 1 content/page 495-496 - [doi:10.1002/pamm.201510238](https://doi.org/10.1002/pamm.201510238)

van Overbrüggen, Timo; Klaas, Michael; Bahl, Björn; Schröder, Wolfgang - "Tomographic Particle-Image Velocimetry Analysis of In-Cylinder Flows" - SAE International journal of engines - vol 8 no 3 content/page 1447-1467 - [doi:10.4271/2015-01-9042](https://doi.org/10.4271/2015-01-9042)

Koh, Seong Ryong; Meysonnat, Pascal; Statnikov, Vladimir; Meinke, Matthias; Schröder, Wolfgang - "Dependence of turbulent wall-shear stress on the amplitude of spanwise transversal surface waves" - Computers & fluids - vol 119 content/page 261-275 - [doi:10.1016/j.compfluid.2015.06.021](https://doi.org/10.1016/j.compfluid.2015.06.021)

Schlanstein, Peter C.; Hesselmann, Felix; Jansen, Sebastian; Gemsa, Jeannine; Kaufmann, Tim A.; Klaas, Michael; Roggenkamp, Dorothee; Schröder, Wolfgang; Schmitz-Rode, Thomas; Steinseifer, Ulrich; Arens, Jutta - "Particle Image Velocimetry Used to Qualitatively Validate Computational Fluid Dynamic Simulations in an Oxygenator: A Proof of Concept" - Cardiovascular engineering and technology - vol 6 no 3 content/page 340-351 - [doi:10.1007/s13239-015-0213-2](https://doi.org/10.1007/s13239-015-0213-2)

Koh, Seong Ryong; Meysonnat, Pascal; Meinke, Matthias; Schröder, Wolfgang - "Drag Reduction Via Spanwise Transversal Surface Waves at High Reynolds Numbers" - Flow, turbulence and combustion - vol 95 no 1 content/page 169-190 - [doi:10.1007/s10494-015-9614-4](https://doi.org/10.1007/s10494-015-9614-4)

Li, Wing Jin; Jessen, Wilhelm; Roggenkamp, Dorothee; Klaas, Michael; Silex, W.; Schiek, M.; Schröder, Wolfgang - "Turbulent drag reduction by spanwise traveling ribbed surface waves" - European journal of mechanics / B - vol 53 content/page 101-112 - [doi:10.1016/j.euromechflu.2015.03.009](https://doi.org/10.1016/j.euromechflu.2015.03.009)

Pogorelov, Alexej; Meinke, Matthias; Schröder, Wolfgang - "Cut-cell method based large-eddy simulation of tip-leakage flow" - Physics of fluids - vol 27 no 7 content/page 075106 - [doi:10.1063/1.4926515](https://doi.org/10.1063/1.4926515)

Statnikov, Vladimir; Sayadi, Taraneh; Meinke, Matthias; Schmid, Peter; Schröder, Wolfgang - "Analysis of pressure perturbation sources on a generic space launcher after-body in supersonic flow using zonal turbulence modeling and dynamic mode decomposition" - Physics of fluids - vol 27 no 1 content/page 016103 - [doi:10.1063/1.4906219](https://doi.org/10.1063/1.4906219)

Winnemöller, Tobias; Meinke, Matthias; Schröder, Wolfgang - "Comparison of the mixing efficiency of different injector configurations" - Computers & fluids - vol 117 content/page 262-272 - [doi:10.1016/j.compfluid.2015.05.017](https://doi.org/10.1016/j.compfluid.2015.05.017)

Schlimpert, Stephan; Hemchandra, Santosh; Meinke, Matthias; Schröder, Wolfgang - "Hydrodynamic instability and shear layer effect on the response of an acoustically excited laminar premixed flame" - Combustion and flame - vol 162 no 2 content/page 345-367 - [doi:10.1016/j.combustflame.2014.08.001](https://doi.org/10.1016/j.combustflame.2014.08.001)

Pielhop, Kai; Klaas, Michael; Schröder, Wolfgang - "Experimental analysis of the fluid-structure interaction in finite-length straight elastic vessels" - European journal of mechanics / B - vol 50 content/page 71-88 - [doi:10.1016/j.euromechflu.2014.11.001](https://doi.org/10.1016/j.euromechflu.2014.11.001)

Winzen, A.; Klaas, Michael; Schröder, Wolfgang - "High-Speed Particle Image Velocimetry and Force Measurements of Bio-Inspired Surfaces" - Journal of aircraft - vol 52 no 2 content/page 471-485 - [doi:10.2514/1.C032742](https://doi.org/10.2514/1.C032742)

## 2014

Nottebrock, Bernardo; Geurts, Koen; Schröder, Wolfgang - "Wall-shear stress measurements in an adverse pressure gradient turbulent boundary layer" - AIAA journal - vol 2014/2352 content/page 1 - [doi:10.2514/6.2014-2098](https://doi.org/10.2514/6.2014-2098)

Siewert, Christoph; Bordás, Róbert; Wacker, Ulrike; Beheng, K. D.; Kunnen, R. P. J.; Meinke, Matthias; Schröder, Wolfgang; Thevenin, Dominique - "Influence of turbulence on the drop growth in warm clouds, Part I : comparison of numerically and experimentally determined collision kernels" - Meteorologische Zeitschrift - vol 23 no 4 content/page 397-410 - [doi:10.1127/0941-2948/2014/0566](https://doi.org/10.1127/0941-2948/2014/0566)

Marnett, M.; Wellenberg, S.; Schröder, Wolfgang - "Real-time simulation of aeroelastic rotor loads for horizontal axis wind turbines" - Science of making torque from wind - vol 524 content/page 012071 - [doi:10.1088/1742-6596/524/1/012071](https://doi.org/10.1088/1742-6596/524/1/012071)

Siewert, C.; Kunnen, R. P. J.; Schröder, Wolfgang - "Collision rates of small ellipsoids settling in turbulence" - Journal of fluid mechanics - vol 758 content/page 686-701 - [doi:10.1017/jfm.2014.554](https://doi.org/10.1017/jfm.2014.554)

Pielhop, Kai; Schmidt, Carmen; Zholtovski, Stefan; Klaas, Michael; Schröder, Wolfgang - "Experimental investigation of the fluid-structure interaction in an elastic 180 degrees curved vessel at laminar oscillating flow" - Experiments in fluids - vol 55 no 10 content/page 1816 - [doi:10.1007/s00348-014-1816-3](https://doi.org/10.1007/s00348-014-1816-3)

Günther, Claudia; Meinke, Matthias; Schröder, Wolfgang - "A flexible level-set approach for tracking multiple interacting interfaces in embedded boundary methods" - Computers & fluids - vol 102 content/page 182-202 - [doi:10.1016/j.compfluid.2014.06.023](https://doi.org/10.1016/j.compfluid.2014.06.023)

Winzen, Andrea; Roidl, Benedikt; Klän, Stephan; Klaas, Michael; Schröder, Wolfgang - "Particle-Image Velocimetry and Force Measurements of Leading-Edge Serrations on Owl-Based Wing Models" - Journal of bionic engineering - vol 11 no 3 content/page 423-438 - [doi:10.1016/S1672-6529\(14\)60055-X](https://doi.org/10.1016/S1672-6529(14)60055-X)

van Overbrüggen, Timo; Schröder, Franka; Klaas, Michael; Schröder, Wolfgang - "A particle-image velocimetry tracer generating technique for liquid flows" - Measurement science and technology - vol 25 no 8 content/page 087001 - [doi:10.1088/0957-0233/25/8/087001](https://doi.org/10.1088/0957-0233/25/8/087001)

Lintermann, Andreas; Schlimpert, S.; Grimmen, J. H.; Günther, C.; Meinke, Matthias; Schröder, Wolfgang - "Massively parallel grid generation on HPC systems" - Computer methods in applied mechanics and engineering - vol 277 content/page 131-153 - [doi:10.1016/j.cma.2014.04.009](https://doi.org/10.1016/j.cma.2014.04.009)

Siewert, C.; Kunnen, R. P. J.; Meinke, Matthias; Schröder, Wolfgang - "Orientation statistics and settling velocity of ellipsoids in decaying turbulence" - Atmospheric research - vol 142 no SI content/page 45-56 - [doi:10.1016/j.atmosres.2013.08.011](https://doi.org/10.1016/j.atmosres.2013.08.011)

van Overbrüggen, Timo; Dannemann, Jan; Klaas, Michael; Schröder, Wolfgang - "Holographic particle image velocimetry measurements in a four-valve combustion engine" - Experiments in fluids - vol 55 content/page 1634 - [doi:10.1007/s00348-013-1634-z](https://doi.org/10.1007/s00348-013-1634-z)

Roidl, B.; Meinke, Matthias; Schröder, Wolfgang - "Boundary layers affected by different pressure gradients investigated computationally by a zonal RANS-LES method" - The international journal of heat and fluid flow - vol 45 content/page 1-13 - [doi:10.1016/j.ijheatfluidflow.2013.11.004](https://doi.org/10.1016/j.ijheatfluidflow.2013.11.004)

## 2013

Statnikov, V.; Meiß, J.-H.; Meinke, Matthias; Schröder, Wolfgang - "Investigation of the turbulent wake flow of generic launcher configurations via a zonal RANS/LES method" - CEAS space journal - vol 5 no 1/2 content/page 75-86 - [doi:10.1007/s12567-013-0045-6](https://doi.org/10.1007/s12567-013-0045-6)

Bücker, Isabella Maria; Karhoff, Daniel-Christian; Klaas, Michael; Schröder, Wolfgang - "Engine In-Cylinder Flow Control via Variable Intake Valve Timing" - SAE technical paper - vol 2013-24-0055 content/page 11 Seiten - [doi:10.4271/2013-24-0055](https://doi.org/10.4271/2013-24-0055)

Koh, Seong Ryong; Schröder, Wolfgang; Meinke, Matthias - "Noise sources in heated coaxial jets" - Computers & fluids - vol 78 content/page 24-28 - [doi:10.1016/j.compfluid.2011.08.021](https://doi.org/10.1016/j.compfluid.2011.08.021)

Lintermann, Andreas; Meinke, Matthias; Schröder, Wolfgang - "Fluid mechanics based classification of the respiratory efficiency of several nasal cavities" - Computers in biology and medicine - vol 43 no 11 content/page 1833-1852 - [doi:10.1016/j.combiomed.2013.09.003](https://doi.org/10.1016/j.combiomed.2013.09.003)

Soodt, Thomas; Pott, Desirée; Klaas, Michael; Schröder, Wolfgang - "Analysis of basic flow regimes in a human airway model by stereo-scanning PIV" - Experiments in fluids - vol 54 no 6 content/page 1562 - [doi:10.1007/s00348-013-1562-y](https://doi.org/10.1007/s00348-013-1562-y)

Konopka, Martin; Meinke, Matthias; Schröder, Wolfgang - "Large-eddy simulation of shock-cooling-film interaction at helium and

- hydrogen injection" - Physics of fluids - vol 25 no 10 content/page 106101 - [doi:10.1063/1.4823745](https://doi.org/10.1063/1.4823745)
- Hartmann, Axel; Klaas, Michael; Schröder, Wolfgang - "Coupled Airfoil Heave/Pitch Oscillations at Buffet Flow" - AIAA journal - vol 51 no 7 content/page 1542-1552 - [doi:10.2514/1.J051512](https://doi.org/10.2514/1.J051512)
- Geiser, Georg; Marinc, Daniel; Schröder, Wolfgang - "Comparison of source reconstruction methods for hybrid aeroacoustic predictions" - International journal of aeroacoustics - vol 12 no 7/8 content/page 639-662 - [doi:10.1260/1475-472X.12.7-8.639](https://doi.org/10.1260/1475-472X.12.7-8.639)
- Konopka, Martin; Jessen, Wilhelm; Meinke, Matthias; Schröder, Wolfgang - "Large-Eddy Simulation of Film Cooling in an Adverse Pressure Gradient Flow" - Journal of turbomachinery - vol 135 no 3 content/page 031031 - [doi:10.1115/1.4007583](https://doi.org/10.1115/1.4007583)
- Gnanamanickam, E. P.; Nottebrock, Bernardo; Grosse, S.; Sullivan, J. P.; Schröder, Wolfgang - "Measurement of turbulent wall shear-stress using micro-pillars" - Measurement science and technology - vol 24 no 12 content/page 124002 - [doi:10.1088/0957-0233/24/12/124002](https://doi.org/10.1088/0957-0233/24/12/124002)
- Meinke, Matthias; Schneiders, Lennart; Günther, Claudia; Schröder, Wolfgang - "A cut-cell method for sharp moving boundaries in Cartesian grids" - Computers & fluids - vol 85 no SI content/page 135-142 - [doi:10.1016/j.compfluid.2012.11.010](https://doi.org/10.1016/j.compfluid.2012.11.010)
- Roidl, Benedikt; Meinke, Matthias; Schröder, Wolfgang - "A reformulated synthetic turbulence generation method for a zonal RANS-LES method and its application to zero-pressure gradient boundary layers" - The international journal of heat and fluid flow - vol 44 content/page 28-40 - [doi:10.1016/j.ijheatfluidflow.2013.03.017](https://doi.org/10.1016/j.ijheatfluidflow.2013.03.017)
- Kunnen, R. P. J.; Siewert, C.; Meinke, Matthias; Schröder, Wolfgang; Beheng, K. D. - "Numerically determined geometric collision kernels in spatially evolving isotropic turbulence relevant for droplets in clouds" - Atmospheric research - vol 127 content/page 8-21 - [doi:10.1016/j.atmosres.2013.02.003](https://doi.org/10.1016/j.atmosres.2013.02.003)
- Schäfer, L.; Göbbert, Jens Henrik; Schröder, Wolfgang - "Dissipation element analysis in experimental and numerical shear flow" - European journal of mechanics / B, Fluids - vol 38 content/page 85-92 - [doi:10.1016/j.euromechflu.2012.10.011](https://doi.org/10.1016/j.euromechflu.2012.10.011)
- Winzen, Andrea; Klaas, Michael; Schröder, Wolfgang - "High-speed PIV measurements of the near-wall flow field over hairy surfaces" - Experiments in fluids - vol 54 no 3 content/page 1472 - [doi:10.1007/s00348-013-1472-z](https://doi.org/10.1007/s00348-013-1472-z)
- Hartmann, Axel; Feldhusen, Antje; Schröder, Wolfgang - "On the interaction of shock waves and sound waves in transonic buffet flow" - Physics of fluids - vol 25 no 2 content/page 026101 - [doi:10.1063/1.4791603](https://doi.org/10.1063/1.4791603)
- Schneiders, Lennart; Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "An accurate moving boundary formulation in cut-cell methods" - Journal of computational physics - vol 235 content/page 786-809 - [doi:10.1016/j.jcp.2012.09.038](https://doi.org/10.1016/j.jcp.2012.09.038)
- Schröder, Wolfgang - "Fluid Mechanics Research at the Institute of Aerodynamics, RWTH Aachen University: From 1912 through 2012" - European journal of mechanics / B, Fluids - vol 40 content/page 2-16 - [doi:10.1016/j.euromechflu.2013.01.005](https://doi.org/10.1016/j.euromechflu.2013.01.005)
- Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Impact of multi-species gas injection on trailing-edge noise" - Computers & fluids - vol 75 content/page 72-85 - [doi:10.1016/j.compfluid.2013.01.016](https://doi.org/10.1016/j.compfluid.2013.01.016)
- Eitel-Amor, G.; Meinke, Matthias; Schröder, Wolfgang - "A lattice-Boltzmann method with hierarchically refined meshes" - Computers & fluids - vol 75 content/page 127-139 - [doi:10.1016/j.compfluid.2013.01.013](https://doi.org/10.1016/j.compfluid.2013.01.013)

## 2012

- Koh, Seong Ryong; Geiser, G.; Foysi, H.; Schröder, Wolfgang - "Impact of inhomogeneous density distribution on acoustic sources in turbulent jets" - ERCOFTAC bulletin - vol 90 content/page 15-20
- Steimle, Per Christian; Karhoff, Daniel-Christian; Schröder, Wolfgang - "Unsteady Transonic Flow over a Transport-Type Swept Wing" - AIAA journal - vol 50 no 2 content/page 399-415 - [doi:10.2514/1.J051187](https://doi.org/10.2514/1.J051187)
- Hartmann, Daniel; Schröder, Wolfgang; Shashikant, Banavara N. - "Non-invasive determination of external forces in vortex-pair-cylinder interactions" - Physics of fluids - vol 24 content/page 061903 - [doi:10.1063/1.4729613](https://doi.org/10.1063/1.4729613)
- Soodt, Thomas; Schröder, Franka; Klaas, Michael; van Overbrüggen, Timo; Schröder, Wolfgang - "Experimental investigation of the transitional bronchial velocity distribution using stereo scanning PIV" - Experiments in fluids - vol 52 content/page 709-718 - [doi:10.1007/s00348-011-1103-5](https://doi.org/10.1007/s00348-011-1103-5)
- Hartmann, Axel; Klaas, Michael; Schröder, Wolfgang - "Time-resolved stereo PIV measurements of shock-boundary layer interaction on a supercritical airfoil" - Experiments in fluids - vol 52 no 3 content/page 591-604 - [doi:10.1007/s00348-011-1074-6](https://doi.org/10.1007/s00348-011-1074-6)
- Konopka, Martin; Meinke, Matthias; Schröder, Wolfgang - "Large-Eddy Simulation of Shock/Cooling-Film Interaction" - AIAA journal - vol 50 no 10 content/page 2102-2114 - [doi:10.2514/1.J051405](https://doi.org/10.2514/1.J051405)
- Bücker, I.; Karhoff, D.-C.; Klaas, Michael; Schröder, Wolfgang - "Stereoscopic multi-planar PIV measurements of in-cylinder tumbling flow" - Experiments in fluids - vol 53 no 6 content/page 1993-2009 - [doi:10.1007/s00348-012-1402-5](https://doi.org/10.1007/s00348-012-1402-5)

Pielhop, K.; Klaas, Michael; Schröder, Wolfgang - "Analysis of the unsteady flow in an elastic stenotic vessel" - European journal of mechanics / B, Fluids - vol 35 Special no SI content/page 102-110 - [doi:10.1016/j.euromechflu.2012.01.010](https://doi.org/10.1016/j.euromechflu.2012.01.010)

Roidl, B.; Meinke, Matthias; Schröder, Wolfgang - "A zonal RANS-LES method for compressible flows" - Computers & fluids - vol 67 content/page 1-15 - [doi:10.1016/j.compfluid.2012.07.003](https://doi.org/10.1016/j.compfluid.2012.07.003)

Klän, S.; Burgmann, S.; Bachmann, Thomas Willem; Klaas, Michael; Wagner, Hermann; Schröder, Wolfgang - "Surface structure and dimensional effects on the aerodynamics of an owl-based wing model" - European journal of mechanics / B, Fluids - vol 33 no May/June content/page 58-73 - [doi:10.1016/j.euromechflu.2011.12.006](https://doi.org/10.1016/j.euromechflu.2011.12.006)

Schlegel, Michael; Noack, Bernd R.; Jordan, Peter; Dillmann, Andreas; Gröschel, Elmar; Schröder, Wolfgang; Wei, Mingjun; Freund, Jonathan B.; Lehmann, Oliver; Tadmor, Gilead - "On least-order flow representations for aerodynamics and aeroacoustics" - Journal of fluid mechanics - vol 697 content/page 367-398 - [doi:10.1017/jfm.2012.70](https://doi.org/10.1017/jfm.2012.70)

Czaplik, Michael; Biener, Ingeborg Anna Elisabeth; Dembinski, Rolf; Pelosi, Paolo; Soodt, Thomas; Schröder, Wolfgang; Leonhardt, Steffen; Marx, Gernot; Rossaint, Rolf; Bickenbach, Johannes - "Analysis of regional compliance in a porcine model of acute lung injury" - Respiratory physiology & neurobiology - vol 184 no 1 content/page 16-26 - [doi:10.1016/j.resp.2012.07.006](https://doi.org/10.1016/j.resp.2012.07.006)

Jessen, Wilhelm; Konopka, Martin; Schröder, Wolfgang - "Particle-Image Velocimetry Measurements of Film Cooling in an Adverse Pressure Gradient Flow" - Journal of turbomachinery - vol 134 no 2 content/page 021025 - [doi:10.1115/1.4003175](https://doi.org/10.1115/1.4003175)

## 2011

Karhoff, D.-C.; Bücker, I.; Dannemann, J.; Klaas, Michael; Schröder, Wolfgang - "Experimental Analysis of Three-Dimensional Flow Structures in Two Four-Valve Combustion Engines" - SAE technical paper - vol 2011 content/page 12 pages - [doi:10.4271/2011-24-0044](https://doi.org/10.4271/2011-24-0044)

Czaplik, Michael; Rossaint, Rolf; Koch, E.; Fahlenkamp, Astrid Veronika; Schröder, Wolfgang; Pelosi, Paolo; Kübler, W. M.; Bickenbach, Johannes - "Methods for quantitative evaluation of alveolar structure during in vivo microscopy" - Respiratory physiology & neurobiology - vol 176 no 3 content/page 123-129 - [doi:10.1016/j.resp.2011.02.009](https://doi.org/10.1016/j.resp.2011.02.009)

Freitas, Rainhill K.; Henze, Andreas; Meinke, Matthias; Schröder, Wolfgang - "Analysis of Lattice-Boltzmann methods for internal flows" - Computers & fluids - vol 47 no 1 content/page 115-121 - [doi:10.1016/j.compfluid.2011.02.019](https://doi.org/10.1016/j.compfluid.2011.02.019)

Schäfer, Lisa; Schröder, Wolfgang - "Comparison of holographic and tomographic particle-image velocimetry turbulent channel flow measurements" - 13. European Turbulence Conference - vol 318 content/page 022019 - [doi:10.1088/1742-6596/318/2/022019](https://doi.org/10.1088/1742-6596/318/2/022019)

Klumpp, Stephan Werner; Meinke, Matthias; Schröder, Wolfgang - "Friction Drag Variation via Spanwise Transversal Surface Waves" - Flow, turbulence and combustion - vol 87 no 1 content/page 33-53 - [doi:10.1007/s10494-011-9326-3](https://doi.org/10.1007/s10494-011-9326-3)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "A level-set based adaptive-grid method for premixed combustion" - Combustion and flame - vol 158 no 7 content/page 1318-1339 - [doi:10.1016/j.combustflame.2010.11.007](https://doi.org/10.1016/j.combustflame.2010.11.007)

Schäfer, Lisa; Dierksheide, U.; Klaas, Michael; Schröder, Wolfgang - "Investigation of dissipation elements in a fully developed turbulent channel flow by tomographic particle-image velocimetry" - Physics of fluids - vol 23 no 3 content/page 035106 - [doi:10.1063/1.3556742](https://doi.org/10.1063/1.3556742)

Hartmann, Axel; Steimle, P. Christian; Klaas, Michael; Schröder, Wolfgang - "Time-Resolved Particle Image Velocimetry of Unsteady Shock Wave-Boundary Layer Interaction" - AIAA journal - vol 49 no 1 content/page 195-204 - [doi:10.2514/1.050635](https://doi.org/10.2514/1.050635)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "A strictly conservative Cartesian cut-cell method for compressible viscous flows on adaptive grids" - Computer methods in applied mechanics and engineering - vol 200 no 9/12 content/page 1038-1052 - [doi:10.1016/j.cma.2010.05.015](https://doi.org/10.1016/j.cma.2010.05.015)

## 2010

Dannemann, Jan; Pielhop, Kai; Klaas, Michael; Schröder, Wolfgang - "Cycle-Resolved Multi-Planar Flow Measurements in a Four-Valve Combustion Engine" - Experiments in fluids - vol 50 no 4 content/page 961-976 - [doi:10.1007/s00348-010-0963-4](https://doi.org/10.1007/s00348-010-0963-4)

Winnemöller, Tobias; Meinke, Matthias; Schröder, Wolfgang - "Turbulent Mixing in an Accelerated Nozzle Flow" - The international journal of heat and fluid flow - vol 31 no 3 content/page 342-350 - [doi:10.1016/j.ijheatfluidflow.2010.02.022](https://doi.org/10.1016/j.ijheatfluidflow.2010.02.022)

Klumpp, Stephan Werner; Meinke, Matthias; Schröder, Wolfgang - "Drag reduction by spanwise transversal surface waves" - Journal of turbulence - vol 11 no 22 content/page 13 S. - [doi:10.1080/14685248.2010.494606](https://doi.org/10.1080/14685248.2010.494606)

Klumpp, Stephan Werner; Meinke, Matthias; Schröder, Wolfgang - "Numerical simulation of riblet controlled spatial transition in

a zero-pressure gradient boundary layer" - Flow, turbulence and combustion - vol 85 no 1 content/page 57-71 - [doi:10.1007/s10494-010-9251-x](https://doi.org/10.1007/s10494-010-9251-x)

Eitel, Georg; Soodt, Thomas; Schröder, Wolfgang - "Investigation of pulsatile flow in the upper human airways" - International journal of design & nature and ecodynamics - vol 5 no 4 content/page 335-353 - [doi:10.2495/DNF-V5-N4-335-353](https://doi.org/10.2495/DNF-V5-N4-335-353)

Bickenbach, Johannes; Czaplík, Michael; Dembinski, Rolf; Pelosi, Paolo; Schröder, Wolfgang; Marx, Gernot; Rossaint, Rolf - "In vivo microscopy in a porcine model of acute lung injury" - Respiratory physiology & neurobiology - vol 172 no 3 content/page 192-200 - [doi:10.1016/j.resp.2010.05.021](https://doi.org/10.1016/j.resp.2010.05.021)

Mösges, Ralph; Büchner, Bernd; Kleiner, M.; Freitas, Rainhill K.; Hörschler, Ingolf; Schröder, Wolfgang - "Computational Fluid Dynamics. Analysis of Nasal Flow" - B-ENT : a publication of the Royal Belgian Society for ENT and Head and Neck Surgery - vol 6 no 3 content/page 161-165 - [doi://WOS:000283521500001](https://doi.org/10.1007/s100283521500001)

Hörschler, Ingolf; Schröder, Wolfgang; Meinke, Matthias - "On the Assumption of steadiness of Nasal Cavity Flow" - Journal of biomechanics - vol 43 no 6 content/page 1081-1085 - [doi:10.1016/j.jbiomech.2009.12.008](https://doi.org/10.1016/j.jbiomech.2009.12.008)

Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Turbulence and heat excited noise sources in single and coaxial jets" - Journal of sound and vibration : JSV - vol 329 no 7 content/page 786-803 - [doi:10.1016/j.jsv.2009.10.012](https://doi.org/10.1016/j.jsv.2009.10.012)

König, Daniel; Meinke, Matthias; Schröder, Wolfgang - "Embedded LES-to-RANS boundary in zonal simulations" - Journal of turbulence - vol 7 no 11 content/page 1-25 - [doi:10.1080/14685241003698159](https://doi.org/10.1080/14685241003698159)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "On accuracy and efficiency of constrained reinitialization" - International journal for numerical methods in fluids - vol 63 no 11 content/page 1347-1358 - [doi:10.1002/flid.2135](https://doi.org/10.1002/flid.2135)

König, Daniel; Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Two-step simulation of slat noise" - Computers & fluids - vol 39 no Issue 3 content/page 512-524 - [doi:10.1016/j.compfluid.2009.10.004](https://doi.org/10.1016/j.compfluid.2009.10.004)

Hartmann, Daniel; Schröder, Wolfgang; Meinke, Matthias - "The Constrained Reinitialization Equation for Level Set Methods" - Journal of computational physics - vol 229 no 5 content/page 1514-1535 - [doi:10.1016/j.jcp.2009.10.042](https://doi.org/10.1016/j.jcp.2009.10.042)

Zhang, Qinyin; Schröder, Wolfgang; Meinke, Matthias - "A zonal RANS-LES method to determine the flow over a high-lift configuration" - Computers & fluids - vol 39 no 7 content/page 1241-1253 - [doi:10.1016/j.compfluid.2010.02.006](https://doi.org/10.1016/j.compfluid.2010.02.006)

Klän, Stephan; Klaas, Michael; Schröder, Wolfgang - "The influence of leading-edge serrations on the flow field of an artificial owl wing" - AIAA meeting papers on disc - vol [15.]2010 no 6

Koh, Seong Ryong; Schröder, Wolfgang; Meinke, Matthias - "Numerical study of noise reduction via wall turbulence control" - AIAA meeting papers on disc - vol [15.]2010 no 5

Foysi, Holger; Geiser, Georg; Koh, Seong Ryong; Schröder, Wolfgang - "Effect of filter with on sound of variable density jets" - AIAA meeting papers on disc - vol [15.]2010 no 5

Klumpp, Stephan Werner; Guldner, Th.; Meinke, Matthias; Schröder, Wolfgang - "Riblets in a turbulent adverse-pressure gradient boundary layer" - AIAA meeting papers on disc - vol [15.]2010 no 6

Klumpp, Stephan Werner; Meinke, Matthias; Schröder, Wolfgang - "Drag reduction in a turbulent boundary layer by spanwise transversal surface waves" - AIAA meeting papers on disc - vol [15.]2010 no 6

Hartmann, Daniel; Schneiders, Lennart; Schröder, Wolfgang; Shashikant, Banavara N. - "On the interaction of a vortex pair with a freely moving cylinder" - AIAA meeting papers on disc - vol [15.]2010 no 6

Geiser, Georg; Koh, Seong Ryong; Foysi, Holger; Schröder, Wolfgang - "Sound generation of variable density jets" - AIAA meeting papers on disc - vol [15.]2010 no 5 content/page 9 S.

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "An Adaptive Dual-Mesh Method for Premixed Combustion Using the Level-Set Approach" - AIAA meeting papers on disc - vol [15.]2010 no 1 content/page 29 S.

Große, Sebastian; Nottebrock, Bernardo; Schröder, Wolfgang - "Measuring the Two-Dimensional Temporal Wall-Shear Stress Distribution with the Micro-Pillar Shear-Stress Sensor MPS3" - AIAA meeting papers on disc - vol [15.]2010 no 1 content/page 10 S.

## 2009

Burgmann, Sebastian; Große, Sebastian; Schröder, Wolfgang; Roggenkamp, Jan; Jansen, Sebastian; Gräf, Felix; Büsen, Martin R. - "A refractive index matched facility for pulsatile flow elastic vessels" - Experiments in fluids - vol 47 no 4/5 content/page 865-881 - [doi:10.1007/s00348-009-0681-y](https://doi.org/10.1007/s00348-009-0681-y)

Große, Sebastian; Schröder, Wolfgang - "The Micro-Pillar Shear-Stress Sensor MPS3 for Turbulent Flow" - Sensors - vol 9 no 4



content/page 2222-2251 - [doi:10.3390/s90402222](https://doi.org/10.3390/s90402222)

Bickenbach, Johannes; Dembinski, Rolf; Czaplík, Michael; Meissner, Sven; Tabuchi, Arata; Mertens, Michael; Knels, Lila; Schröder, Wolfgang; Pelosi, Paolo; Koch, Edmund; Kuebler, Wolfgang M.; Rossaint, Rolf; Kuhlen, Ralf - "Comparison of two in vivo microscopy techniques to visualize alveolar mechanics" - Journal of clinical monitoring and computing - vol 23 no 5 content/page 323-332 - [doi:10.1007/s10877-009-9200-1](https://doi.org/10.1007/s10877-009-9200-1)

Große, Sebastian; Schröder, Wolfgang - "High Reynolds Number Turbulent Wind Tunnel Boundary Layer Wall-Shear Stress Sensor" - Journal of turbulence - vol 10 no 14 content/page 12 S. - [doi:10.1080/14685240902953798](https://doi.org/10.1080/14685240902953798)

Große, Sebastian; Schröder, Wolfgang - "Wall-shear stress patterns of coherent structures in turbulent duct flow" - Journal of fluid mechanics - vol 633 content/page 147-158 - [doi:10.1017/S0022112009007988](https://doi.org/10.1017/S0022112009007988)

Große, Sebastian; Schröder, Wolfgang - "Two-Dimensional Visualization of Turbulent Wall Shear Stress Using Micropillars" - AIAA journal - vol 47 no 2 content/page 314-321 - [doi:10.2514/1.36892](https://doi.org/10.2514/1.36892)

Burgmann, Sebastian; Dannemann, Jan; Schröder, Wolfgang - "Time-resolved and volumetric PIV measurements of a transitional separation bubble on an SD7003 airfoil" - Experiments in fluids - vol 44 no 4 content/page 609-622 - [doi:10.1007/s00348-007-0421-0](https://doi.org/10.1007/s00348-007-0421-0)

Bui, Thanh Phong; Schröder, Wolfgang - "Acoustic wave refraction in open turbulent flames" - Acta acustica united with Acustica - vol 95 no 3 content/page 440-447 - [doi:10.3813/AAA.918168](https://doi.org/10.3813/AAA.918168)

Recktenwald, Ingo; Alkishriwi, Nouri; Schröder, Wolfgang - "PIV-LES analysis of channel flow rotating about the streamwise axis" - European journal of mechanics / B, Fluids - vol 28 no 5 content/page 677-688 - [doi:10.1016/j.euromechflu.2009.04.001](https://doi.org/10.1016/j.euromechflu.2009.04.001)

Bui, Thanh Phong; Ihme, Matthias; Schröder, Wolfgang; Pitsch, Heinz Günter - "Analysis of different sound source formulations to simulate combustion generated noise using a hybrid LES/APE-RF method" - International journal of aeroacoustics - vol 8 no 1/2 content/page 95-123 - [doi:10.1260/147547209786235028](https://doi.org/10.1260/147547209786235028)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "A General Formulation of Boundary Conditions on Cartesian Cut-Cells for Compressible Viscous Flow" - AIAA meeting papers on disc - vol [14.]2009 no 7 content/page 1-10

Koh, Seong Ryong; Schröder, Wolfgang; Meinke, Matthias - "Sound Generation Control by Fluid Bleeding" - AIAA meeting papers on disc - vol [14.]2009 no 6 content/page 13 S.

Winnemöller, Tobias; Meinke, Matthias; Schröder, Wolfgang - "Mixing in an Accelerated Nozzle Flow" - AIAA meeting papers on disc - vol [14.]2009 no 7 content/page 15 S.

Bui, Thanh Phong; Schröder, Wolfgang; Meinke, Matthias - "Acoustic refraction effects in turbulent reacting flows" - AIAA meeting papers on disc - vol [14.]2009 no 6 content/page 9 S.

## 2008

Renze, Peter Clemens-August; Jessen, Wilhelm; Schröder, Wolfgang - "Numerical and Experimental Analysis of Cylindrical Film Cooling Holes in a Shallow Cavity" - AIAA meeting papers on disc - vol [13.]2008 no 1 content/page AIAA 2008-570 - [doi:10.2514/6.2008-570](https://doi.org/10.2514/6.2008-570)

Burgmann, Sebastian; Schröder, Wolfgang - "Investigation of vortex induced unsteadiness of a separation in a bubble via time-resolved and scanning PIV measurements" - Experiments in fluids - vol 45 no 4 content/page 675-691 - [doi:10.1007/s00348-008-0548-7](https://doi.org/10.1007/s00348-008-0548-7)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "A multilevel formulation for Cartesian hierarchical grid methods with adaptive mesh refinement" - Computers & fluids - vol 37 no 9 content/page 1103-1125 - [doi:10.1016/j.compfluid.2007.06.007](https://doi.org/10.1016/j.compfluid.2007.06.007)

Klän, Stephan; Bachmann, Thomas Willem; Klaas, Michael; Wagner, Hermann; Schröder, Wolfgang - "Experimental analysis of the flow field over a novel owl based airfoil" - Experiments in fluids - vol 46 no 5 content/page 975-989 - [doi:10.1007/s00348-008-0600-7](https://doi.org/10.1007/s00348-008-0600-7)

Alkishriwi, Nouri; Meinke, Matthias; Schröder, Wolfgang - "Large-eddy simulation of rotating turbulent channel flow" - Flow, turbulence and combustion - vol 80.2008 no 1 content/page 119-132 - [doi:10.1007/s10494-007-9080-8](https://doi.org/10.1007/s10494-007-9080-8)

Große, Sebastian; Schröder, Wolfgang - "Measurement in a zero-pressure gradient turbulent boundary layer with forced thermal convection" - Flow, turbulence and combustion - vol 81 no 1/2 content/page 131-153 - [doi:10.1007/s10494-007-9101-7](https://doi.org/10.1007/s10494-007-9101-7)

Mählmann, Stefan; Schröder, Wolfgang - "Disturbance evolution in the leading-edge region of a blunt flat plate in supersonic flow" - Fluid dynamics research - vol 40 no 11/12 content/page 803-826 - [doi:10.1016/j.fluiddyn.2008.02.003](https://doi.org/10.1016/j.fluiddyn.2008.02.003)

Bui, Thanh Phong; Schröder, Wolfgang; Meinke, Matthias - "Numerical analysis of the acoustic field of reacting flows via acoustic

perturbation equations" - Computers & fluids - vol 37 no 9 content/page 1157-1169 - [doi:10.1016/j.compfluid.2007.10.014](https://doi.org/10.1016/j.compfluid.2007.10.014)

Gröschel, Elmar; Schröder, Wolfgang; Renze, Peter Clemens-August; Meinke, Matthias; Comte, Pierre - "Noise prediction for a turbulent jet using different hybrid methods" - Computers & fluids - vol 37 no 4 : special issue content/page 414-426 - [doi:10.1016/j.compfluid.2007.02.010](https://doi.org/10.1016/j.compfluid.2007.02.010)

Renze, Peter Clemens-August; Schröder, Wolfgang; Meinke, Matthias - "Large-eddy simulation of film cooling flows at density gradients" - The international journal of heat and fluid flow - vol 29 no 1 content/page 18-34 - [doi:10.1016/j.ijheatfluidflow.2007.07.010](https://doi.org/10.1016/j.ijheatfluidflow.2007.07.010)

Große, Sebastian; Soodt, Thomas; Schröder, Wolfgang - "Dynamic calibration technique for the micro-pillar shear-stress sensor MPS3" - Measurement science and technology - vol 19 no 10 content/page 105201 - [doi:10.1088/0957-0233/19/10/105201](https://doi.org/10.1088/0957-0233/19/10/105201)

Freitas, Rainhill K.; Schröder, Wolfgang - "Numerical investigation of the three-dimensional flow in a human lung model" - Journal of biomechanics - vol 41 no 11 content/page 2446-2457 - [doi:10.1016/j.jbiomech.2008.05.016](https://doi.org/10.1016/j.jbiomech.2008.05.016)

Hörschler, Ingolf; Schröder, Wolfgang; Meinke, Matthias - "Numerical analysis of the impact of the nose geometry on the flow structure : Part II: Natural valve and lower turbinate" - Computational fluid dynamics journal - vol 16 no 3 content/page 243-260

Hörschler, Ingolf; Schröder, Wolfgang; Meinke, Matthias - "Numerical analysis of the impact of the nose geometry on the flow structure : Part I: Septum spurs" - Computational fluid dynamics journal - vol 16 no 2 content/page 219-234

Große, Sebastian; Schröder, Wolfgang - "Dynamic wall-shear stress measurements in turbulent pipe flow using the micro-pillar sensor MPS3" - The international journal of heat and fluid flow - vol 2008 content/page 830-840 - [doi:10.1016/j.ijheatfluidflow.2008.01.008](https://doi.org/10.1016/j.ijheatfluidflow.2008.01.008)

Hartmann, Daniel; Meinke, Matthias; Schröder, Wolfgang - "Differential equation based constrained reinitialization for level set methods" - Journal of computational physics - vol 227 no 14 content/page 6821-6845 - [doi:10.1016/j.jcp.2008.03.040](https://doi.org/10.1016/j.jcp.2008.03.040)

Große, Sebastian; Schröder, Wolfgang - "Mean wall-shear stress measurements using the micro-pillar shear stress sensor MPS3" - Measurement science and technology - vol 19 no 1 content/page 015403 - [doi:10.1088/0957-0233/19/1/015403](https://doi.org/10.1088/0957-0233/19/1/015403)

König, Daniel; Koh, Seong Ryong; Meinke, Matthias; Schröder, Wolfgang - "Slat Noise Source Identification" - AIAA meeting papers on disc - vol [13.]2008 no 4 content/page 17 S.

Steimle, Per Christian; Schröder, Wolfgang; Klaas, Michael - "Transonic shock buffet interference of an oscillating high aspect ratio swept wing" - AIAA meeting papers on disc - vol 13 no 10 content/page 1 S.

Bui, Thanh Phong; Ihme, Matthias; Meinke, Matthias; Schröder, Wolfgang; Pitsch, Heinz Günter - "Numerical applicability of different sound source formulations to compute combustion noise using acoustic perturbation equations for reacting flows" - AIAA meeting papers on disc - vol [13.]2008 no 5

## 2007

Jessen, Wilhelm; Schröder, Wolfgang; Klaas, Michael - "Evolution of jets effusing from inclined holes into crossflow" - The international journal of heat and fluid flow - vol 28 no 6 content/page 1312-1326 - [doi:10.1016/j.ijheatfluidflow.2007.06.010](https://doi.org/10.1016/j.ijheatfluidflow.2007.06.010)

Recktenwald, I.; Weller, T.; Schröder, Wolfgang; Oberlack, M. - "Comparison of direct numerical simulations and particle-image velocimetry data of turbulent channel flow rotating about the streamwise axis" - Physics of fluids - vol 19 no 8 content/page 085114 - [doi:10.1063/1.2760278](https://doi.org/10.1063/1.2760278)

Gröschel, Elmar; Schröder, Wolfgang; Schlegel, Michael; Scouten, Jon; Noack, Bernd R.; Comte, Pierre - "Reduced-order representation of turbulent jet flow and its noise source" - European series in applied and industrial mathematics - vol 16 content/page 33-50 - [doi:10.1051/proc:2007012](https://doi.org/10.1051/proc:2007012)

Große, Sebastian; Schröder, Wolfgang; Klaas, Michael; Klöckner, A.; Roggenkamp, Jan - "Time resolved analysis of steady and oscillating flow in the upper human airways" - Experiments in fluids - vol 42 no 6 content/page 955-970 - [doi:10.1007/s00348-007-0318-y](https://doi.org/10.1007/s00348-007-0318-y)

Bui, Thanh Phong; Schröder, Wolfgang; Meinke, Matthias - "Acoustic perturbation equations for reacting flows to compute combustion noise" - International journal of aeroacoustics - vol 6 no 4 content/page 335-355 - [doi:10.1260/147547207783359468](https://doi.org/10.1260/147547207783359468)

Renze, Peter Clemens-August; Schröder, Wolfgang; Meinke, Matthias - "LES of film cooling for different jet fluids" - Hangkong-dongli-xuebao : jikan = Journal of aerospace power - vol 22 no 4 content/page 521-530

Bachmann, Thomas Willem; Klän, Stephan; Baumgartner, Werner; Klaas, Michael; Schröder, Wolfgang; Wagner, Hermann - "Morphometric characterisation of wing feathers of the barn owl *Tyto alba pratincola* and the pigeon *Columba livia*" - Frontiers in zoology - vol 4 no 23 content/page 15 S. - [doi:10.1186/1742-9994-4-23](https://doi.org/10.1186/1742-9994-4-23)

Recktenwald, Ingo; Schröder, Wolfgang; Weller, T.; Oberlack, M. - "Comparison of DNS and PIV data of turbulent channel flow

rotating about the streamwise axis" - Physics of fluids - vol 19

Alkishiwi, Nouri; Schröder, Wolfgang; Meinke, Matthias - "Large-eddy simulation of streamwise-rotating turbulent channel flow" - Computers & fluids - vol 37 no 7 content/page 786-792 - [doi:10.1016/j.compfluid.2007.03.018](https://doi.org/10.1016/j.compfluid.2007.03.018)

Renze, Peter Clemens-August; Meinke, Matthias; Schröder, Wolfgang - "Hole shape comparison for film cooling flows using large-eddy simulations" - AIAA meeting papers on disc - vol 2007 no 1/5

Koh, Seong Ryong; Gröschel, Elmar; Meinke, Matthias; Schröder, Wolfgang - "Numerical analysis of sound sources in high Reynolds number single jets" - AIAA meeting papers on disc - vol [12.]2007 no 10-11

## 2006

Brücker, Christoph; Schröder, Wolfgang - "Flow visualization of internal flow in the human lung network" - Journal of visualization - vol 9 no 3 content/page 239-239 - [doi:10.1007/BF03181664](https://doi.org/10.1007/BF03181664)

Triep, Michael; Brücker, Christoph; Schröder, Wolfgang; Sieß, Thomas - "Computational fluid dynamics and digital particle image velocimetry study of the flow through an optimized micro-axial blood pump" - Artificial organs - vol 30 no 5 content/page 384-391 - [doi:10.1111/j.1525-1594.2006.00230.x](https://doi.org/10.1111/j.1525-1594.2006.00230.x)

Hörschler, Ingolf; Schröder, Wolfgang; Meinke, Matthias - "Comparison of steady and unsteady nasal cavity flow solutions for the complete respiration cycle" - Computational fluid dynamics journal - vol 15 no 3 content/page 354-377

Burgmann, Sebastian; Brücker, Christoph; Schröder, Wolfgang - "Scanning PIV measurements of a laminar separation bubble" - Experiments in fluids - vol 41 no 2 content/page 319-326 - [doi:10.1007/s00348-006-0153-6](https://doi.org/10.1007/s00348-006-0153-6)

Guo, Xiao; Schröder, Wolfgang; Meinke, Matthias - "Large-eddy simulations of film cooling flows" - Computers & fluids - vol 35 no 6 content/page 587-606 - [doi:10.1016/j.compfluid.2005.02.007](https://doi.org/10.1016/j.compfluid.2005.02.007)

Hausmann, Felix; Schröder, Wolfgang - "Coated hot-film sensors for transition detection in cruise flight" - Journal of aircraft - vol 43 no 2 content/page 456-465 - [doi:10.2514/1.14825](https://doi.org/10.2514/1.14825)

Alkishiwi, Nouri; Meinke, Matthias; Schröder, Wolfgang - "A large-eddy simulation method for low Mach number flows using preconditioning and multigrid" - Computers & fluids - vol 35 no 10 content/page 1126-1136 - [doi:10.1016/j.compfluid.2005.06.002](https://doi.org/10.1016/j.compfluid.2005.06.002)

Hörschler, Ingolf; Brücker, Christoph; Schröder, Wolfgang; Meinke, Matthias - "Investigation of the impact of the geometry on the nose flow" - European journal of mechanics / B, Fluids - vol 25 no 4 content/page 471-490 - [doi:10.1016/j.euromechflu.2005.11.006](https://doi.org/10.1016/j.euromechflu.2005.11.006)

Alkishiwi, Nouri; Meinke, Matthias; Schröder, Wolfgang; Braun, Alexander; Pfeifer, Herbert - "Large-eddy simulations and particle-image velocimetry measurements of tundish flow" - Steel research international - vol 77 no 8 content/page 565-575 - [doi://WOS:000240182900006](https://doi.org/10.1002/200500006)

Große, Sebastian; Schröder, Wolfgang; Brücker, Christoph - "Nano-newton drag sensor based on flexible micro-pillars" - Measurement science and technology - vol 17 no 10 content/page 2689-2697 - [doi:10.1088/0957-0233/17/10/022](https://doi.org/10.1088/0957-0233/17/10/022)

Hörschler, Ingolf; Schröder, Wolfgang - "On the geometry dependence of the nose flow" - ERCOFTAC bulletin - vol 68 content/page 13-16

Huppertz, Guido; Schröder, Wolfgang; Klaas, Michael - "Engine jet/vortex interaction in the near wake of an airfoil" - AIAA meeting papers on disc - vol [11.]2006 no 10-13

Gröschel, Elmar; Schröder, Wolfgang; Meinke, Matthias - "Noise generation mechanisms in single and coaxial jets" - AIAA meeting papers on disc - vol [11.]2006 no 8/9

## 2005

Triep, Michael; Brücker, Christoph; Schröder, Wolfgang - "High-speed PIV measurements of the flow downstream a dynamic model of the human vocal folds" - Experiments in fluids - vol 39 no 2 content/page 232-245 - [doi:10.1007/s00348-005-1015-3](https://doi.org/10.1007/s00348-005-1015-3)

Alkishiwi, Nouri; Meinke, Matthias; Schröder, Wolfgang - "Preconditioned large-eddy simulations for tundish flows" - The international journal of heat and fluid flow - vol 27.2006 no 4

Rütten, Frank; Schröder, Wolfgang; Meinke, Matthias - "Large-eddy simulation of low frequency oscillations of the Dean vortices in turbulent pipe bend flows" - Physics of fluids - vol 17 no 3 content/page 035107 - [doi:10.1063/1.1852573](https://doi.org/10.1063/1.1852573)

Schröder, Wolfgang; Meijering, Alexander - "Transonic flow over an adaptive wing section" - GAMM-Mitteilungen - vol 28 no 1

content/page 56-72

Brücker, Christoph; Spatz, J.; Schröder, Wolfgang - "Wall shear stress imaging using micro-structured surfaces with flexible micro-pillars" - Experiments in fluids - vol 39 no 2 content/page 464-474 - [doi:10.1007/s00348-005-1003-7](https://doi.org/10.1007/s00348-005-1003-7)

Klaas, Michael; Schröder, Wolfgang; Althaus, Wolfgang - "Experimental investigation of slender streamwise vortices and oblique shock-vortex interaction" - AIAA papers - vol 2005-4630 bis 2005-5393

Gröschel, Elmar; Meinke, Matthias; Schröder, Wolfgang - "Noise prediction for a turbulent jet using an LES/CAA method" - AIAA meeting papers on disc - vol [10.]2005 no 10

## 2004

Hillenherms, Cornelia; Schröder, Wolfgang; Limberg, Wolfram - "Experimental investigation of a pitched airfoil in transonic flow" - Aerospace science and technology - vol 8 no 7 content/page 583-590 - [doi:10.1016/j.ast.2004.07.001](https://doi.org/10.1016/j.ast.2004.07.001)

Huppertz, Guido; Fares, Ehab Mahmoud Aziz Mohamed; Abstiens, Ronald; Schröder, Wolfgang - "Investigation of the engine jet/wing tip vortex interference" - Aerospace science and technology - vol 8 no 3 content/page 175-183 - [doi:10.1016/j.ast.2003.10.008](https://doi.org/10.1016/j.ast.2003.10.008)

Ewert, Roland; Schröder, Wolfgang - "On the simulation of trailing edge noise with a hybrid LES/APE method" - Journal of sound and vibration : JSV - vol 270 no 3 content/page 509-524 - [doi:10.1016/j.jsv.2003.09.047](https://doi.org/10.1016/j.jsv.2003.09.047)

Schröder, Wolfgang - "Aeroacoustics research in Europe : The CEAS-ASC report on 2003 highlights" - Journal of sound and vibration : JSV - vol 278 no 1/2 content/page 19 S. - [doi:10.1016/j.jsv.2004.06.002](https://doi.org/10.1016/j.jsv.2004.06.002)

Fares, Ehab Mahmoud Aziz Mohamed; Schröder, Wolfgang - "A general one-equation turbulence model for free shear and wall-bounded flows" - Flow, turbulence and combustion - vol 73 no 3/4 content/page 187-215 - [doi:10.1007/s10494-005-8625-y](https://doi.org/10.1007/s10494-005-8625-y)

Hausmann, Felix; Schröder, Wolfgang - "Transition detection in cruise flight using a resistant multisensor hot-Film technique" - AIAA papers - vol 2004 no 0001-2004,1388

## 2003

Ewert, Roland; Schröder, Wolfgang - "Acoustic perturbation equations based on flow decomposition via source filtering" - Journal of computational physics - vol 188 no 2 content/page 365-398 - [doi:10.1016/S0021-9991\(03\)00168-2](https://doi.org/10.1016/S0021-9991(03)00168-2)

El-Askary, Wageeh Ahmed Abd-El-Fattah; Meinke, Matthias; Schröder, Wolfgang - "Large eddy simulation of a compressible boundary layer" - Proceedings in applied mathematics and mechanics : PAMM - vol 2 no 1 content/page 304-305 - [doi:10.1002/pamm.200310136](https://doi.org/10.1002/pamm.200310136)

Gerndt, Andreas; van Reimersdahl, Thomas; Kuhlen, Torsten; Bischof, Christian; Hörschler, Ingolf; Meinke, Matthias; Schröder, Wolfgang - "Large-scale CFD data handling in a VR-based otorhinolaryngological CAS-system using a Linux-Cluster" - The journal of supercomputing - vol 25 no 2 content/page 143-154 - [doi:10.1023/A:1023992511823](https://doi.org/10.1023/A:1023992511823)

Henze, Andreas; Schröder, Wolfgang; Bleilebens, Martin; Olivier, Herbert - "Numerical and experimental investigations on the influence of thermal boundary conditions on shock boundary-layer interaction" - Computational fluid dynamics journal - vol 12.2003 no 2 content/page 401-407

Fares, Ehab Mahmoud Aziz Mohamed; Huppertz, Guido; Abstiens, Ronald; Schröder, Wolfgang - "Investigation of engine jet/wing-tip vortex interference" - Aerospace science and technology - vol 8 no 3 content/page 175-183

Hörschler, Ingolf; Meinke, Matthias; Schröder, Wolfgang - "Numerical Simulation of the Flow Field in a Model of the Nasal Cavity" - Computers & fluids - vol 32 no 1 content/page 39-45 - [doi:10.1016/S0045-7930\(01\)00097-4](https://doi.org/10.1016/S0045-7930(01)00097-4)

Krause, Egon; Thomer, Oliver; Schröder, Wolfgang - "Strong shock-vortex interaction : a numerical study" - Computational fluid dynamics journal - vol 12 no 2 content/page 266-278

Schröder, Wolfgang; Ewert, Roland; Meinke, Matthias - "A two-step LES/APE approach for airframe noise" - ERCOFTAC bulletin - vol 53

## 2002

Meinke, Matthias; Schröder, Wolfgang; Krause, Egon; Rister, Thomas - "A comparison of second- and sixth-order methods for large-eddy simulations" - Computers & fluids - vol 31 no Vol. 31 content/page 695-718 - [doi:10.1016/S0045-7930\(01\)00073-1](https://doi.org/10.1016/S0045-7930(01)00073-1)

Thomer, Oliver; Klaas, Michael; Krause, Egon; Schröder, Wolfgang - "Interaction between longitudinal vortices and normal and oblique shocks" - International journal for numerical methods in engineering : IJNME - vol 60 no 1

Brücker, Christoph; Dohmen, Rudolf; Pfeffer, J. G.; Busse, Friedrich; Schröder, Wolfgang; Sieß, Thomas; Schmitz-Rode, Thomas - "Strömungstechnische Auslegung und Optimierung einer perkutan implantierbaren Miniatur-Blutpumpe" - Biomedizinische Technik = Biomedical engineering - vol 47 content/page 114-117 - [doi:10.1515/bmte.2002.47.s1a.114](https://doi.org/10.1515/bmte.2002.47.s1a.114)

Fares, Ehab Mahmoud Aziz Mohamed; Schröder, Wolfgang - "A differential equation to approximate wall distance" - International journal for numerical methods in fluids - vol 39 no 8 content/page 743-762 - [doi:10.1002/flid.348](https://doi.org/10.1002/flid.348)

Konrath, Robert; Schröder, Wolfgang; Limberg, Wolfram - "Holographic particle image velocimetry applied to the flow within the cylinder of a four-valve internal combustion engine" - Experiments in fluids - vol 33 no 6 content/page 781-793 - [doi:10.1007/s00348-002-0495-7](https://doi.org/10.1007/s00348-002-0495-7)

Brücker, Christoph; Steinseifer, Ulrich; Schröder, Wolfgang; Reul, Helmut - "Unsteady flow through a new mechanical heart valve prosthesis analysed by digital particle image Velocimetry" - Measurement science and technology - vol 13 no 7 content/page 1043-1049 - [doi:10.1088/0957-0233/13/7/311](https://doi.org/10.1088/0957-0233/13/7/311)

Konrath, Robert; Schröder, Wolfgang - "Telecentric lenses for imaging in particle-image velocimetry : a new stereoscopic approach" - Experiments in fluids - vol 33 no 5 content/page 703-708 - [doi:10.1007/s00348-002-0531-7](https://doi.org/10.1007/s00348-002-0531-7)

Brücker, Christoph; Schröder, Wolfgang; Apel, H.; Reul, Herbert; Sieß, Thomas - "DPIV Study of the Flow in a Micro-Axial Blood Pump" - Artificial organs - vol 2002

Fares, Ehab Mahmoud Aziz Mohamed; Abstiens, Ronald; Huppertz, Guido; Schröder, Wolfgang - "Numerical and experimental investigation of the interaction of wingtip vortices and engine jets in the near field" - AIAA papers - vol 2002 no 0001-2002,1143

Ewert, Roland; Schröder, Wolfgang; Meinke, Matthias; El-Askary, Wageeh Ahmed Abd-El-Fattah - "LES as a basis to determine sound emission" - AIAA papers - vol 2002 no 0001-2002,1143

Klaas, Michael; Thomer, Oliver; Schröder, Wolfgang - "Experimental and computational investigation of oblique shock-vortex-interaction" - AIAA papers - vol 2002-2380 bis 2002-3348

Hausmann, Felix; Schröder, Wolfgang; Limberg, Wolfram - "Development of a multi-sensor hot-film measuring technique for transition detection in cruise flight" - AIAA Paper - vol 2002-0534

Ting, Chen-Ching; Henze, Andreas; Schröder, Wolfgang - "Liquid Crystal Display (LCD) Technique for Heat Transfer Measurements on ELAC's Orbital Stage (EOS) in Supersonic Flow" - AIAA Paper - vol 2002-5200

## 2001

Ting, Chen-Ching; Schröder, Wolfgang - "Visualization of Supersonic Flow past EOS" - Zeitschrift für angewandte Mathematik und Mechanik : ZAMM = Journal of applied mathematics and mechanics - vol 812000,3 no Suppl. 3 content/page 777-780 - [doi:10.1002/zamm.200108115161](https://doi.org/10.1002/zamm.200108115161)

Rütten, Frank; Meinke, Matthias; Schröder, Wolfgang - "Large-eddy simulations of 90°-pipe bend flows" - Journal of turbulence - vol 2 no 1 content/page 003-003 - [doi:10.1088/1468-5248/2/1/003](https://doi.org/10.1088/1468-5248/2/1/003)

Brücker, Christoph; Steinseifer, Ulrich; Schröder, Wolfgang; Reul, Herbert - "Flow and Occluder Dynamics of the New Triflo Medical Heart Valve Prosthesis" - The journal of heart valve disease - vol 2001

Schröder, Wolfgang; Meinke, Matthias; Schvorak, Alexander - "Large-eddy simulations of accelerated pipe flows" - Computational fluid dynamics journal - vol 10 no 1 content/page 96-118

Abstiens, Ronald; Fühling, S.; Schröder, Wolfgang - "Boundary-layer measurements on the ELAC configuration at Re = 20.10" - Vehicle system dynamics - vol 35

Hillenherms, Cornelia; Schröder, Wolfgang; Limberg, Wolfram - "Unsteady force and pressure measurements on an oscillatory rectangular wing section in transonic flow" - AIAA papers - vol 2001 no 2400-2001,2478

Konrath, Robert; Schröder, Wolfgang; Limberg, Wolfram - "Three-dimensional flow measurements within the cylinder of a motored four-valve engine using holographic particle-image velocimetry" - SAE technical paper - vol 2001-01-3493 - [doi:10.4271/2001-01-3493](https://doi.org/10.4271/2001-01-3493)

Meijering, Alexander; Schröder, Wolfgang - "Experimental analysis of separated transitional transonic airfoil flow" - AIAA papers - vol 2001 no 2700-2001,3095



## 2000

Ewert, Roland; Meinke, Matthias; Schröder, Wolfgang - "Aeroacoustics source terms for the linearized Euler equations" - AIAA paper - vol 2000 no 046

Thomer, Oliver; Schröder, Wolfgang; Meinke, Matthias - "Numerical simulation of normal and oblique shock vortex interaction" - GAMM 99 - vol 801999,1 no Suppl. 1 content/page 181-184 - [doi://WOS:000086621000046](https://doi.org/10.1007/978-3-642-00004-6)

Ewert, Roland; Opiela, Mario; Meinke, Matthias; Schröder, Wolfgang - "Computation of the aeroacoustic sound field generated by the turbulent flow behind a blunt trailing edge" - Computational fluid dynamics journal - vol 9 no 1

Hillenherms, Cornelia; Limberg, Wolfram; Schröder, Wolfgang - "Experimental setup for transonic flow over a 2-D rectangular wing section oscillating in pitch" - The aeronautical journal - vol 104.2000 no 1038 : 104.2000,1040 content/page Paper-No. 0313

Fares, Ehab Mahmoud Aziz Mohamed; Meinke, Matthias; Schröder, Wolfgang - "A differential equation to determine the wall distance" - International journal for numerical methods in fluids - vol 34

Fares, Ehab Mahmoud Aziz Mohamed; Meinke, Matthias; Schröder, Wolfgang - "Numerical simulation of the interaction of wingtip vortices and engine jets in the near field" - AIAA paper - vol 2000 no 222

Ewert, Roland; Meinke, Matthias; Schröder, Wolfgang - "Comparison of numerical schemes applied to CAA problems" - Zeitschrift für angewandte Mathematik und Mechanik : ZAMM = Journal of applied mathematics and mechanics - vol 80 no Suppl. 1 content/page S605-S606 - [doi://WOS:000086621200015](https://doi.org/10.1007/978-3-642-00001-5)

Fares, Ehab Mahmoud Aziz Mohamed; Schröder, Wolfgang - "Zonal approach for the solution of the Navier-Stokes equations" - Zeitschrift für angewandte Mathematik und Mechanik : ZAMM = Journal of applied mathematics and mechanics - vol 80 no Suppl. 3 content/page S633-S634 - [doi://WOS:000086621200029](https://doi.org/10.1007/978-3-642-00002-9)

Henze, Andreas; Schröder, Wolfgang - "On the influence of thermal boundary conditions on shock boundary-layer interaction" - DGLR-Jahrestagung - vol 2000 content/page 175-175

## 1993

Schröder, Wolfgang; Hartmann, Gerhard - "Detailed Numerical Analysis of Hypersonic Flows over a Two-Stage Spacecraft" - Journal of spacecraft and rockets - vol 1 no 4 content/page 8-13 - [doi:10.2514/3.25465](https://doi.org/10.2514/3.25465)

## 1992

Schröder, Wolfgang; Hartman, G. - "Implicit solutions of three-dimensional viscous hypersonic flows" - Computers & fluids - vol 21 no 1 content/page 109-132 - [doi:10.1016/0045-7930\(92\)90036-U](https://doi.org/10.1016/0045-7930(92)90036-U)

## 1990

Schröder, Wolfgang; Keller, H. B. - "Wavy Taylor-vortex flows via multigrid-continuation methods" - Journal of computational physics - vol 91 no 1 content/page 197-227 - [doi:10.1016/0021-9991\(90\)90011-O](https://doi.org/10.1016/0021-9991(90)90011-O)

## 1989

Hänel, Dieter; Meinke, Matthias; Schröder, Wolfgang - "Multigrid Solutions for the Navier-Stokes Equations" - Notes on numerical fluid mechanics and multidisciplinary design - vol 25 content/page 176-190

## 1988

Schröder, Wolfgang; Hänel, Dieter - "Lösung der Navier-Stokes Gleichungen mit dem Mehrgitter-konzept" - Abhandlungen aus dem Aerodynamischen Institut der Rhein.-Westf. Technischen Hochschule Aachen = Proceedings / Institute of Aerodynamics Aachen University - vol 29 content/page 26-27

Schröder, Wolfgang - "Ein Upwind-Verfahren zur Lösung der Navier-Stokes Gleichungen" - Abhandlungen aus dem Aerodynamischen Institut der Rhein.-Westf. Technischen Hochschule Aachen = Proceedings / Institute of Aerodynamics Aachen University - vol 28 content/page 1-11

Schröder, Wolfgang - "Ein Upwind-Verfahren zur Lösung der Navier-Stokes-Gleichungen" - Zeitschrift für angewandte Mathematik und Mechanik : ZAMM = Journal of applied mathematics and mechanics - vol 68 content/page T355-T357

1987

Schröder, Wolfgang; Hänel, D. - "An unfactored implicit scheme with multigrid acceleration for the solution of the Navier-Stokes equations" - Computers & fluids - vol 15 no 3 content/page 313-336 - [doi:10.1016/0045-7930\(87\)90013-2](https://doi.org/10.1016/0045-7930(87)90013-2)

1986

Schröder, Wolfgang; Hänel, Dieter - "Application of the Multigrid Method to the Solution of Parabolic Differential Equations" - Notes on numerical fluid mechanics and multidisciplinary design - vol 14 content/page 249-260

1985

Schröder, Wolfgang; Hänel, Dieter - "Application of the Multigrid Method to the Solution of Parabolic Differential Equations" - Notes on numerical fluid mechanics and multidisciplinary design - vol 14 content/page 249-260