

List of Publications

ANDREAS MEISTER

Books

1. A. Meister, Th. Sonar – *Numerik*
(Springer Spektrum Verlag, Berlin Heidelberg, 2019)
2. K. Burg, H. Haf, F. Wille, A. Meister – *Höhere Mathematik für Ingenieure (Band I, Analysis)*
(Springer Vieweg Verlag, Wiesbaden, 11. Auflage 2017)
3. M. Brokate, N. Henze, F. Hettlich, A. Meister, G. Schranz-Kirlinger, Th. Sonar – *Arbeitsbuch Grundwissen Mathematik - Höhere Analysis, Numerik und Stochastik*
(Springer Spektrum Verlag, Berlin Heidelberg, 2016)
4. M. Brokate, N. Henze, F. Hettlich, A. Meister, G. Schranz-Kirlinger, Th. Sonar – *Grundwissen Mathematik - Höhere Analysis, Numerik und Stochastik*
(Springer Spektrum Verlag, Berlin Heidelberg, 2016)
5. A. Meister – *Numerik linearer Gleichungssysteme - Eine Einführung in moderne Verfahren*
(Springer Spektrum Verlag, Wiesbaden, 5. Auflage 2015)
6. K. Burg, H. Haf, F. Wille, A. Meister – *Höhere Mathematik für Ingenieure (Band III, Gewöhnliche Differentialgleichungen, Distributionen, Integraltransformationen)*
(Springer Vieweg Verlag, Wiesbaden, 6. Auflage 2013)
7. R. Ansorge, H. Bijl, A. Meister, T. Sonar (Eds.) – *Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws*
(Notes on Numerical Fluid Mechanis and Multidisciplinary Design, Vol. 120, Springer Verlag, Heidelberg, Berlin, 2013)
8. K. Burg, H. Haf, F. Wille, A. Meister – *Funktionentheorie*
(Springer Vieweg Verlag, Wiesbaden, 2. Auflage 2013)
9. K. Burg, H. Haf, F. Wille, A. Meister – *Vektoranalysis*
(Springer Vieweg Verlag, Wiesbaden, 2. Auflage 2012)
10. K. Burg, H. Haf, F. Wille, A. Meister – *Höhere Mathematik für Ingenieure (Band II, Lineare Algebra)*
(Vieweg+Teubner Verlag, Wiesbaden, 7. Auflage 2012)
11. K. Burg, H. Haf, F. Wille, A. Meister – *Partielle Differentialgleichungen und funktionalanalytische Grundlagen*
(Vieweg+Teubner Verlag, Wiesbaden, 5. Auflage 2010)

12. S. Hartmann, A. Meister, M. Schäfer, S. Turek (Eds.) – *Fluid-Structure-Interaction: Theory, Numerics and Applications* (Kassel University Press, Kassel, 2009)
13. A. Meister, J. Struckmeier (Eds.) – *Hyperbolic Partial Differential Equations: Theory, Numerics and Applications* (Vieweg Verlag, Wiesbaden, 2002)

Contributions in Books

1. A. Meister – Invited contribution for the book of the Indian Institute of Technology: *Industrial Mathematics and Statistics*, Titel des Kapitels: *Asymptotic Expansions and Numerical Methods in Computational Fluid Dynamics*, pp. 63 - 137 (Narosa Publishing House, New Dehli, 2003)
2. A. Meister, J. Benz – Invited contribution in *Handbook of Geomathematics*, Titel des Kapitels: *Phosphorus Cycles in Lakes and Rivers: Modeling, Analysis and Simulation* (Springer, Heidelberg, 2010)
3. A. Meister, S. Ortleb – The DG Scheme on Triangular Grids with Adaptive Modal and Variational Filtering Routines Applied to Shallow Water Flows (In: Ansorge, R., H. Bijl, A. Meister, and Th. Sonar (eds.): *Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws*. Springer, Heidelberg, Berlin, 2013)
4. R. Borromeo Ferri, A. Meister – Mathematisches Modellieren durch Team Teaching mehrperspektivisch lehren und lernen (In M. Bracke, M. Ludwig, und K. Vorhölter (Hrsg.): *Neue Materialien für einen realitätsbezogenen Mathematikunterricht 8: ISTRON-Schriftenreihe*, 1 - 10, Springer Fachmedien, Wiesbaden, 2021)
5. R. Borromeo Ferri, A. Meister – Planificación y realizacin de jornadas de modelización matemática Promoción de la cooperación entre escuelas y universidades (In R. Borromeo Ferri, J. Mena Lorca and A. Mena Lorca (Hrsg.), *Fomento de la Educación-STEM y la Modelización Matemática para profesores: Fundamentos, ejemplos y experiencias*, 24 - 42, Kassel University Press, 2021)

Refereed Publications in Journals

1. D. Hietel, A. Meister, Th. Sonar – *On the Comparison of Four Different Implementations of an implicit Third-Order ENO Scheme of Box Type for the Computation of Unsteady Compressible Flow* (Numerical Algorithms **13**, 77-105, 1996)

2. A. Meister – *Comparison of Different Krylov Subspace Methods Embedded in an Implicit Finite Volume Scheme for the Computation of Viscous and Inviscid Flow Fields on Unstructured Grids*
(Journal of Computational Physics **140**, 311-345, 1998)
3. A. Meister, M. Oevermann – *An Implicit Finite Volume Approach of the $k - \epsilon$ Turbulence Model on Unstructured Grids*
(ZAMM **78** (11), 743-757, 1998)
4. A. Meister, Th. Sonar – *Finite Volume Schemes for Compressible Fluid Flow*
(Surv. Math. Ind. **8**, 1-36, 1998)
5. A. Meister – *Asymptotic Single and Multiple Scale Expansions in the Low Mach Number Limit*
(SIAM Journal on Applied Mathematics, Vol. **60**, Number 1, 256-271, 1999)
6. R. Klein, A. Meister, C.D. Munz, Th. Sonar, et. al. – *Asymptotic adaptive methods for multiscale problems in fluid mechanics*
(Journal of Engineering Mathematics, Vol **39** (1/4), 261-343, 2001)
7. A. Meister, L. Hoffmann – *Compressible Low Mach Number Scheme based on Image Processing and Asymptotic Analysis*
(Computational Fluid Dynamics Journal, Vol **9**, Number 2, 399-410, 2001)
8. A. Meister, C. Vömel – *Efficient Preconditioning of Linear Systems arising from the Discretization of Hyperbolic Conservation Laws*
(Advances in Computational Mathematics, Vol **14**, Number 1, 49-73, 2001)
9. B. Fischer, M. Ludwig, A. Meister – *The Thermoregulation of Infants: Modeling and Numerical Simulation*
(BIT Num. Math., Vol **41**, Number 5, 950-966, 2001)
10. Th. Grahs, A. Meister, Th. Sonar – *Image Processing for Numerical Approximation of Conservation Laws*
(SIAM Journal on Scientific Computing, Vol. **23**, Number 5, 1439-1455, 2002)
11. A. Meister, J. Witzel – *Krylov Subspace Methods in Computational Fluid Dynamics*
(Surv. Math. Ind. **10**, 231-267, 2002)
12. M. Breuss, B. Fischer, A. Meister – *The Numerical Simulation of Unsteady Heat Conduction in a Premature Infant*
(International Journal on Numerical Methods in Fluids, Vol. **40**, 253-261, 2002)
13. A. Meister – *Asymptotic based preconditioning technique for low Mach number flows*
(Invited Survey Article, ZAMM **83** (1), 3-25, 2003)

14. H. Burchard, E. Deleersnijder, A. Meister – *A higher-order conservative Patankar-type discretization for stiff systems of production-destruction equations*
(Appl. Numer. Math. **47** (1), 1-30, 2003)
15. A. Meister – *Viscous Fluid Flow at all Speeds: Analysis and Numerical Simulation*
(Journal of Applied Mathematics and Physics **54**, 1010-1049, 2003)
16. A. Berg, U. Iben, A. Meister, J. Schmidt – *On the Simulation of Cavitation in Hydraulic Pipelines based on the Thermodynamic and Caloric Properties of Liquid and Steam*
(International Journal on Shock Waves **14** (1-2), 111-121, 2005)
17. H. Burchard, E. Deleersnijder, A. Meister – *Application of Modified Patankar schemes to stiff biogeochemical models of the water column*
(Ocean Dynamics, Vol **55**, Number 3-4, 326-337, 2005)
18. P. Birken, A. Meister – *Stability of Preconditioned Finite Volume Schemes at Low Mach Numbers*
(BIT Num. Math., Vol **45**, Number 3, 463-480, 2005)
19. H. Burchard, K. Bolding, W. Kühn, A. Meister, T. Neumann, L. Umlauf – *Description of a flexible and extendable physical-biogeochemical model system for the water column*
(J. Mar. Syst., **61**, 180-211, 2006)
20. M. Breuss, V. Dolejši, A. Meister – *Anisotropic adaptive resolution of boundary layers for heat conduction problems*
(ZAMM **86** (6), 450-463, 2006)
21. M. Breuss, A. Meister, Th. Sonar – *Modellierung und numerische Simulation der Thermoregulation von Früh- und Neugeborenen*
(Math. Semesterberichte **53** (2), 184-209, 2006)
22. P. Birken, J. Tebbens, A. Meister, M. Tuma – *Preconditioner Updates applied to CFD Model Problems*
(Appl. Numer. Math., **58**, 1628-1641, 2008)
23. N. Broekhuizen, J. Bruggeman, A. Meister, G.J. Rickard – *An improved and generalized second order, unconditionally positive, mass conserving integration scheme for biochemical systems*
(Appl. Numer. Math. **58**, 319-340, 2008)
24. S. Hartmann, J. Duintjer Tebbens, A. Meister, K. J. Quint – *Efficient Finite Element Analysis of Inelastic Structures with Iterative Solvers*
(Journal on Applied Mathematics and Mechanics (ZAMM), **89**, 711-728, 2009)

25. S. Kopecz, M. Krebs, A. Meister, O. Wünsch – *A fast numerical approach for the simulation of highly viscous non-isothermal non-Newtonian fluids*
(Journal on Applied Mathematics and Physics (ZAMP), **61**, Number 4, 673-684, 2010)
26. W. Arne, N. Marheineke, A. Meister, R. Wegener – *Numerical analysis of Cosserat rod and string models for viscous jets in rotational spinning processes*
(Mathematical Models and Methods in Applied Sciences, 11(20), 1941-1965, 2010)
27. P. Birken, K. J. Quint, S. Hartmann, A. Meister – *A Time-Adaptive Fluid-Structure Interaction Method for Thermal Coupling*
(Computing and Visualization in Science, 13(7), 331-340, 2011)
28. A. Meister, S. Ortleb, Th. Sonar – *Application of Spectral Filtering to Discontinuous Galerkin Methods on Triangulations*
(Numerical Methods for Partial Differential Equations, Vol **28**, Issue 6, 1840-1868, 2012)
29. A. Meister, S. Ortleb, Th. Sonar – *New Adaptive Modal and DTV Filtering Routines for the DG Method on Triangular Grids applied to the Euler Equations*
(Int. J. Geomath. **3**, 17-50, 2012)
30. A. Meister, S. Ortleb, Th. Sonar, M. Wirz – *A comparison of the Discontinuous-Galerkin- and Spectral-Difference-Method on triangulations using PKD polynomials*
(J. Comp. Phys., Vol. **231**, Issue **23**, 77227729, 2012)
31. A. Meister, S. Ortleb, Th. Sonar, M. Wirz – *An extended Discontinuous Galerkin and Spectral Difference Method with modal filtering*
(Journal on Applied Mathematics and Mechanics (ZAMM), **93**, Number 6-7, 459-464, 2013)
32. A. Avila, A. Meister, M. Steigemann – *On numerical methods for nonlinear singularly perturbed Schrödinger problems*
(Appl. Numer. Math., **86**, 22-42, 2014)
33. A. Meister, S. Ortleb – *On Unconditionally Positive Implicit Time Integration for the DG Scheme applied to Shallow Water Flows*
(International Journal for Numerical Methods in Fluids, Vol. **76**, Issue **2**, 69-94, 2014)
34. J. Schäfer, H. Xuan, S. Kopecz, P. Birken, M. Gobbert, A. Meister – *A Memory-Efficient Finite Volume Method for Advection-Diffusion-Reaction Systems with Non-Smooth Sources*
(Num. Meth. PDEs 31(1), 143-167, 2015)

35. P. Birken, T. Gleim, D. Kuhl, A. Meister – *Fast Solvers for Unsteady Thermal Fluid Structure Interaction*
(International Journal for Numerical Methods in Fluids, Vol. **79**, 16-29, 2015)
36. W. Arne, N. Marheineke, A. Meister, S. Schiessl, R. Wegener – *Finite volume approach for instationary Cosserat rod model describing the spinning of viscous jets*
(Journal of Computational Physics **294**, 20-37, 2015)
37. A. Meister, S. Ortleb – *A positivity preserving and well-balanced DG scheme using finite volume subcells in almost dry regions*
(Applied Mathematics and Computation **272**, 259-273, 2016)
38. K. Obwald, A. Siegmund, P. Birken, V. Hannemann, A. Meister – *L^2 Roe: A low-dissipation version of Roe's approximate Riemann solver for low Mach numbers*
(Int. J. Numer. Meth. Fluids **81(2)**, 7186, 2016)
39. D.S. Blom, P. Birken, H. Bijl, F. Kessels, A. Meister, A.H. van Zuijlen – *A comparison of Rosenbrock and ESDIRK methods combined with iterative solvers for unsteady compressible flows*
(Adv. Comp. Math. 42(6), 1401-1426, 2016)
40. A. Avila, A. Meister, M. Steigemann – *An adaptive Galerkin method for the time-dependent complex Schrödinger equation*
(Appl. Numer. Math., **121**, 149-169, 2017)
41. S. Kopecz, A. Meister – *On Order Conditions for modified Patankar-Runge-Kutta schemes*
(Appl. Numer. Math., **123**, 159-179, 2018)
42. S. Kopecz, A. Meister – *Unconditionally Positive and Conservative Third Order modified Patankar-Runge-Kutta Discretizations of Production-Destruction Systems*
(BIT Num. Math., 1-38, 2018)
43. S. Kopecz, A. Meister – *On the Existence of Three-Stage Third Order Modified Patankar-Runge-Kutta Schemes*
(Numerical Algorithms **81**, 1473-1484, 2019)
44. R. Borromeo Ferri, A. Meister – *Aprendizagem efetiva em STEM com a abordagem de Ensino por Ligaes Transversais Fazer uma educao matemtica interdisciplinar de sucesso!*
(Educacao e Matematica **154**, 9-13, 2019)
45. A. Avila, S. Kopecz, A. Meister – *A Comprehensive Theory on Generalized BBKS Schemes*
(Appl. Numer. Math., **157**, 19-37, 2020)

46. A. Avila, G. J. Gonzalez, S. Kopecz, A. Meister – *Extension of modified Patankar-Runge-Kutta schemes to nonautonomous production-destruction systems based on Oliver’s approach*
(Journal of Computational and Applied Mathematics, **389**, 2021)
47. T. Izgin, S. Kopecz, A. Meister – *On Lyapunov Stability of Positive and Conservative Time Integrators and Application to Second Order Modified Patankar-Runge-Kutta Schemes* (Accepted for publication: Mathematical Modelling and Numerical Analysis (*M²NA*))

Submitted Articles

1. T. Izgin, S. Kopecz, A. Meister – *On the Stability of Unconditionally Positive and Linear Invariants Preserving Time Integration Schemes* (Submitted)
2. H. Kraus, J. Kuhnert, A. Meister, P. Suchde – *Meshfree Collocation for Elliptic Problems with Discontinuous Coefficients* (Submitted)
3. J. Huang, T. Izgin, S. Kopecz, A. Meister, C. W. Shu – *On the stability of strong-stability-preserving modified Patankar Runge-Kutta schemes* (Submitted)

Proceedings

1. A. Meister – *Ein implizites Finite-Volumen-Verfahren zur Berechnung instationärer Strömungen auf unstrukturierten Gittern*
(in: Proceedings 9. DGLR-Fachsymposium “Strömung mit Ablösung“, Erlangen, 1994)
2. A. Meister – *Development of an Implicit Finite Volume Scheme for the Computation of Unsteady Flow Fields on Unstructured Moving Grids*
(in: Numerical Methods for Fluid Dynamics V, pp. 481-488, Eds.: M.J. Baines, K.W. Morton, Clarendon Press, Oxford, 1995)
3. A. Meister, M. Oevermann – *Computation of Laminar and Turbulent Compressible Flow Fields on Unstructured Grids with an Implicit Finite Volume Scheme*
(in: Proceedings of the 2nd Seminar on Euler and Navier-Stokes Equations, Prague, 1996)
4. O. Friedrich, D. Hempel, A. Meister, Th. Sonar – *Adaptive Computation of Unsteady Flow Fields with the DLR- τ -Code.*
(in: AGARD Conference Proceedings CP-578, Paper 37, Sevilla, 1996)
5. A. Meister – *Zur Berechnung laminarer und turbulenter Strömungsfelder mit einer Finite-Volumen-Methode*
(in: Proceedings der GAMM-Jahrestagung, Regensburg, (ZAMM **78** (S3), 1007-1010, 1998))

6. A. Meister, L. Hoffmann – *The Extension of a Compressible Flow Solver to the Low Mach Number Regime*
(in: Proceedings of the 3rd Seminar on Euler and Navier-Stokes Equations, Prague, 1998)
7. A. Meister, L. Hoffmann – *A Numerical Scheme for Low Mach Number Flows based on Asymptotic Analysis with Time-Dependent Adaptation of the Asymptotic Sequence*
(in: Proceedings of the Fourth European Computational Fluid Dynamics Conference, Volume 1, Part 1, 567-572, Eds.: C. Hirsch, M. Pandolfi et. al., Athen, 1998)
8. Th. Grahs, A. Meister, Th. Sonar – *Nonlinear Anisotropic Artificial Dissipation for the Computation of the Euler Equations based on Algorithms from Image Processing*
(in: Proceedings of the International Symposium on Computational Fluid Dynamics, pp. 1216-1225, Bremen, 1999)
9. Th. Grahs, A. Meister, Th. Sonar – *Nonlinear anisotropic artificial dissipation: Characteristic filters for computation of the Euler equations*
(in: Finite Volumes for Complex Applications II, Problems and Perspectives, Proceedings of the Second International Symposium on Finite Volumes for Complex Applications, pp. 297-306, Duisburg, 1999)
10. B. Fischer, M. Ludwig, A. Meister – *A finite volume method to compute the steady state temperature distribution in premature or newborn infants*
(in: Proceedings der GAMM-Jahrestagung, Göttingen, 2000)
11. A. Meister, C. Vömel – *Preconditioned Krylov Subspace Methods for Hyperbolic Conservation Laws*
(in: Proceedings of the Eighth International Conference on Hyperbolic Problems, Magdeburg, pp. 703-712, 2000)
12. A. Meister – *A Numerical Method for Compressible and Low Mach Number Fluid Flow*
(in: Notes on Numerical Fluid Mechanics, Proceedings of the STAB-Symposium, pp. 265-272, Stuttgart, 2000)
13. A. Meister – *Theoretical investigation of the Lax-Friedrichs scheme in the low Mach number limit*
(in: Proceedings of the GAMM-Workshop: Discrete Modelling and Discrete Algorithms in Continuum Mechanics, pp. 177-186, Braunschweig, 2000)
14. M. Breuss, B. Fischer, A. Meister – *The unsteady thermoregulation of premature infants - a model and its application*
(in: Proceedings of the GAMM-Workshop: Discrete Modelling and Discrete Algorithms in Continuum Mechanics, pp. 47-56, Braunschweig, 2000)

15. A. Meister – *Numerical Simulation of high and low speed flow*
(in: Proceedings of the 4th Seminar on Euler and Navier-Stokes Equations, Prague, 2001)
16. M. Breuss, B. Fischer, A. Meister – *An application of a blood flow model*
(in: Proceedings of the International Symposium on Algorithms for Approximation IV, pp. 428-436, Huddersfield, 2001)
17. A. Meister – *Asymptotic Expansions and Numerical Methods for Compressible and Low Mach Number Fluid Flow*
(Proc. Appl. Math. Mech. **1**, pp. 526-529, 2002)
18. A. Berg, U. Iben, A. Meister – *Simulation of Cavitation in Thermodynamic Equilibrium*
(Proceedings of the Ninth International Conference on Hyperbolic Problems, pp. 735-744, Pasadena, 2002)
19. A. Berg, U. Iben, A. Meister – *Modeling and Numerical Simulation of Cavitation for Compressible Liquid Flow*
(Proc. Appl. Math. Mech. **2**, pp. 372-373, 2003)
20. A. Berg, U. Iben, A. Meister – *Second Order Methods for the Simulation of Pressure Waves and Cavitation of Water*
(Proceedings of the International Conference on Mathematical and Numerical Aspects of Waves, pp. 535-540, Jyväskylä, 2003)
21. P. Birken, A. Meister – *On Low Mach Number Preconditioning of Finite Volume Schemes*
(Proc. Appl. Math. Mech. **5**, pp. 759-760, 2005)
22. P. Birken, A. Meister – *Analysis of Finite Volume Schemes in the Low Mach Number Regime*
(Proceedings of the Conference on Topical Problems of Fluid Dynamics, pp. 13-17, Prag, 2006)
23. J. Benz, A. Meister, P. Zardo – *A Positive and Conservative Second Order Finite Volume Scheme applied to a Phosphor Cycle in Canals with Sediment*
(Proc. Appl. Math. Mech. **7**, pp. 1022101-1022102, 2007)
24. P. Birken, A. Meister, M. Tuma, J. Tebbens – *Updating preconditioners for permuted non-symmetric linear systems* (Proc. Appl. Math. Mech. **7**, pp. 2040045-2040046, 2007)
25. J. Benz, A. Meister, P. Zardo – *A conservative, positivity preserving scheme for advection-diffusion-reaction equations in biochemical applications*
(Proceedings of the Twelfth International Conference on Hyperbolic Problems, Maryland, Part 2, 399-408, 2008)

26. S. Kopecz, A. Meister, A. Ouazzi, S. Turek, O. Wünsch – *Efficient computation of non-isothermal highly viscous incompressible flow*
(Proc. Appl. Math. Mech. **8**, pp. 10845-10846, 2008)
27. P. Birken, K.J. Quint, S. Hartmann, A. Meister – *On Coupling Schemes for Heat Transfer in FSI applications*
(Proceedings of the International Workshop on Fluid-Structure Interaction, pp. 21-30, 2009)
28. P. Birken, S. Hartmann, A. Meister, K.J. Quint – *On Higher Order Time Integration for Thermal Coupling*
(Proceedings of the International Conference on Numerical Analysis and Applied Mathematics 2009, Volume 2, pp. 1184-1187, 2009)
29. P. Birken, A. Meister – *Asymptotics Based Simulation of Thermo-Mechanical Cooling Processes*
(in K. Steinhoff, H. J. Maier, D. Biermann (eds.), *Functionally Graded Materials in Industrial Mass Production*, Auerbach, Verlag Wissenschaftliche Scripten, pp. 289-298, 2009)
30. P. Birken, S. Hartmann, A. Meister, K.J. Quint – *Thermal Fluid-Structure-Interaction of Cooling Processes in Steel Forming*
(in K. Steinhoff, H. J. Maier, D. Biermann (eds.), *Functionally Graded Materials in Industrial Mass Production*, Auerbach, Verlag Wissenschaftliche Scripten, pp. 299-309, 2009)
31. S. Ortleb, A. Meister, Th. Sonar: *Adaptive Spectral Filtering and Digital Total Variation Postprocessing for the DG Method on Triangular Grids: Application to the Euler Equations*
(Selected papers from the ICOSAHOM '09 conference, June 22-26, Trondheim, Norway, Lecture Notes in Computational Science and Engineering, Vol. 76, 469-479, 2010)
32. P. Birken, K. J. Quint, S. Hartmann, A. Meister – *Choosing norms in adaptive FSI calculations*
(Proc. Appl. Math. Mech. **10**, pp. 555-556, 2010)
33. A. Meister, S. Ortleb, Th. Sonar – *Adaptive Spectral Filtering and Digital Total Variation Postprocessing for the DG Method on Triangular Grids: Applications to the Euler Equations*
(Proceedings of the International Conference on Numerical Analysis and Applied Mathematics 2011)
34. S. Ortleb, A. Meister, Th. Sonar – *Adaptive Spectral Filtering and DTV Postprocessing for the DG Method on Triangular Grids*
(Proceedings of the Conference on Topical Problems of Fluid Mechanics, Prag, 2011)

35. S. Kopecz, A. Meister, O. Wünsch – *A coupled FEM/DG approach for the simulation of cavitating micro foams*
(Proc. Appl. Math. Mech. **11**, pp. 779-780, 2011)
36. V. Hannemann, A. Siegmund, K. Oswald, P. Birken, K. Weinman, A. Meister – *Dissipation of upwind schemes at high wave numbers*
(Proceedings of the 7th International Conference on Computational Fluid Dynamics (ICCFD7), pp. 7-2012-2204, 2012)
37. W. Arne, N. Marheineke, A. Meister, R. Wegener – *Numerical Treatment of Instationary Cosserat Rod Model for the Spinning of Viscous Jets*
(Progress in Industrial Mathematics at ECMI, 2012)
38. H. Bijl, P. Birken, A. Meister, S. van Zuijlen – *A comparison of the efficiency of Rosenbrock and DIRK variants*
(Proc. Appl. Math. Mech. **12**, pp. 675-676, 2012)
39. M. Weiland, M. Berth, P. Birken, S. Carstens, D. Kuhl, A. Meister, O. Wünsch – *Experimental investigations of thermal fluid structure interaction*
(Proceedings of the 1st International Conference on Thermo-Mechanically Graded Materials, pp. 127-134, 2012)
40. P. Birken, T. Gleim, D. Kuhl, A. Meister – *Numerical Simulation of Thermal Fluid Structure Interaction using the Nonlinear Heat Equation*
(Proceedings of the 1st International Conference on Thermo-Mechanically Graded Materials, pp. 103-108, 2012)
41. D. Blom, H. Bijl, P. Birken, A. Meister, A. van Zuijlen – *Rosenbrock Time Integration for Unsteady Flow Simulations*
(Proceedings of the International Conference on Computational Methods for Coupled Problems in Science and Engineering, 2013)
42. P. Birken, T. Gleim, D. Kuhl, A. Meister – *Fast Solvers for Thermal Fluid Structure Interaction*
(Proceedings of the International Conference on Computational Methods in Marine Engineering, 2013)
43. M. Gobbert, A. Meister, S. Wallbaum – *On Unconditionally Positivity Preserving and Conservative Methods for Systems of Advection-Diffusion-Reaction Equations*
(Proc. Appl. Math. Mech., 965-966, 2014)
44. P. Birken, T. Gleim, D. Kuhl, A. Meister – *Extrapolation in Time in Thermal Fluid Structure Interaction*
(in M. Mehl, M. Bischoff, M. Schfer (eds.): Recent Trends in Computational Engineering CE2014, LNCSE 105, Springer, pp. 215-231, 2015)

45. T. Gleim, P. Birken, M. Weiland, D. Kuhl, A. Meister, O. Wünsch – *Thermal fluid-structure-interaction - Experimental and numerical analysis* (AIP Conference Proceedings 1648, 560003, 2015)
46. V. Straub, S. Ortleb, P. Birken, A. Meister – *Efficient Time Integration of IMEX Type using Exponential Integrators for Compressible, Viscous Flow Simulation* (Proc. Appl. Math. Mech. 16, pp. 867-868, 2016)
47. V. Straub, S. Ortleb, P. Birken, A. Meister – *On stability and conservation properties of (s)EPIRK integrators in the context of discretized PDEs* (Proceedings of the 16th International Conference on Hyperbolic Problems, pp. 617-630, Aachen, 2016)
48. A. Meister, John C. Butcher – *Sensitivity of modified Patankar-type schemes for systems of conservative production-destruction equations* (AIP Conference Proceedings 1863, 320006, 2017)
49. V. Straub, S. Ortleb, P. Birken, A. Meister – *Adopting (s)EPIRK schemes in a domain-based IMEX setting* (AIP Conference Proceedings 1863, 410008, 2017)
50. T. Gleim, P. Birken, M. Weiland, D. Kuhl, A. Meister, O. Wünsch – *Experimental and numerical aspects of a thermal fluid-structure phenomenon* (AIP Conference Proceedings 1863, 410004, 2017)
51. S. Kopecz, A. Meister, B. E. Peercy, M. K. Gobbert – *Parameter Identification for Calcium Release in a Heart Cell with Modified Patankar-Runge-Kutta Schemes* (Proc. Appl. Math. Mech., 2018)
52. V. Straub, S. Ortleb, P. Birken, A. Meister – *A new domain-based implicit-explicit time stepping scheme based on the class of exponential integrators called sEPIRK* (Proc. Appl. Math. Mech., 2019)
53. S. Kopecz, A. Meister – *A comparison of numerical methods for conservative and positive advection-diffusion-production-destruction systems* (Proc. Appl. Math. Mech., 2019)
54. C. Barajas, S. Kopecz, A. Meister, B. E. Peercy, M. K. Gobbert – *Simulation of Calcium Waves in a Heart Cell on Modern Multi-Core Parallel Computing Platforms* (Proc. Appl. Math. Mech., 2019)
55. Th. Izgin, S. Kopecz, A. Meister – *Recent Developments in the Field of Modified Patankar-Runge-Kutta-methods* (Proc. Appl. Math. Mech., 2021)
56. S. Kopecz, A. Meister, H. Podhaisky – *On Adaptive Patankar-Runge-Kutta methods* (Proc. Appl. Math. Mech., 2021)

Diploma Thesis

- A. Meister – *Die numerische Behandlung des Neumannschen Außenraumproblems bei der Helmholtzgleichung mit einem regularisierten kombinierten Potentialansatz* (University of Göttingen, 1993)

Dissertation

- A. Meister – *Zur zeitgenauen numerischen Simulation reibungsbehafteter, kompressibler, turbulenter Strömungsfelder mit einer impliziten Finite-Volumen-Methode vom Box-Typ* (Technical University of Darmstadt, 1996)

Habilitation Thesis

- A. Meister – *Analyse und Anwendung Asymptotik-basierter numerischer Verfahren zur Simulation reibungsbehafteter Strömungen in allen Mach-Zahlbereichen* (University of Hamburg, 2001)

Published Lectures and Seminars

1. A. Meister, Th. Sonar – *Asymptotische Entwicklungen und ihre Anwendung in technischen Problemstellungen* (Institute of Applied Mathematics, University of Hamburg, 1997)
2. A. Meister – *Numerische lineare Algebra* (Institute of Applied Mathematics, University of Hamburg, 1998)
3. A. Meister – *Iterative Gleichungssystemlöser und deren Anwendung in der numerischen Strömungsmechanik* (Institute of Applied Mathematics, University of Hamburg, 1998)
4. A. Meister – *Höhere Numerische Mathematik* (Department of Mathematics, University of Hamburg, 2000)
5. G. Kaiser, A. Meister, C.-P. Ortlieb, J. Struckmeier – *Modellierung in der Schule* (University of Hamburg, Project of VolkswagenStiftung, 2001)
6. A. Meister, C. Nagel – *Numerische Mathematik für Studierende der Lehrämter* (Department of Mathematics, University of Hamburg, 2001)
7. A. Meister – *Numerische Mathematik* (Institute of Mathematics, University of Lübeck, 2003)
8. A. Meister – *Praktische Mathematik* (Institute of Mathematics, University of Lübeck, 2003)

9. A. Meister – Numerische Mathematik
(Department of Mathematics and Computer Sciences, University of Kassel, 2005)
10. A. Meister – Elementargeometrie
(Department of Mathematics and Computer Sciences, University of Kassel, 2006)
11. A. Meister – Numerik I
(Department of Mathematics, University of Kassel, 2008)
12. A. Meister – Numerik II
(Department of Mathematics, University of Kassel, 2009)
13. A. Meister – Numerische Mathematik für Ingenieure
(Department of Mathematics, University of Kassel, 2010)
14. S. Kopecz A. Meister – Höhere Mathematik I für Ingenieure
(Department of Mathematics and Natural Sciences, University of Kassel, 2019)
15. S. Kopecz A. Meister – Höhere Mathematik II für Ingenieure
(Department of Mathematics and Natural Sciences, University of Kassel, 2020)