Curriculum Vitae

Dr.-Ing. Volker Gravemeier

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PROFESSIONAL EXPERIENCE

2017 -   **Visiting Lecturer, Technische Universität (TU) München, Germany**

2011 -   **Chief Executive Officer and Founding Shareholder, AdCo Engineering^{GW} GmbH, Ismaning, Germany**

2012 - 2017   **Research Associate, Technische Universität (TU) München, Germany**
Institute for Computational Mechanics (Head: Prof. Dr.-Ing. Wolfgang A. Wall)

2007 - 2012   **Head of Emmy Noether Research Group, TU München, Germany**
Title of Research Project: "Computational Multiscale Methods for Turbulent Combustion in Complex Geometries"

07-10/2010   **Visiting Fellow, Stanford University, Stanford, CA, USA**
Center for Turbulence Research (Director: Prof. Parviz Moin)
Stanford University and NASA Ames Research Center, Moffet Field, CA, USA

2005 - 2006   **Research Associate, Technische Universität (TU) München, Germany**
Institute for Computational Mechanics (Head: Prof. Dr.-Ing. Wolfgang A. Wall)

2004   **Postdoctoral Fellow, Stanford University, Stanford, CA, USA**
Center for Turbulence Research (Director: Prof. Parviz Moin)
Stanford University and NASA Ames Research Center, Moffet Field, CA, USA

2000 - 2003   **Research Associate, Universität Stuttgart, Germany**
Institute of Structural Mechanics (Head: Prof. Dr.-Ing. Ekkehard Ramm)
Member of Deutsche Forschungsmeinschaft (DFG) Sonderforschungsbereich (SFB) 404 "Mehrfeldprobleme in der Kontinuumsmechanik" (German Research Foundation Collaborative Research Center 404 "Multifieldproblems in Continuum Mechanics")

EDUCATION

December 2003   **Doktor-Ingenieur (doctorate), Universität Stuttgart, Germany**
graduated with distinction (summa cum laude)

2000 - 2003   **PhD Studies, Universität Stuttgart, Germany**

PhD Thesis Title: "The Variational Multiscale Method for Laminar and Turbulent Incompressible Flow"
Examining Committee:
Prof. Dr.-Ing. Ekkehard Ramm (Universität Stuttgart, Thesis Adviser)
Prof. Dr.-Ing. Wolfgang A. Wall (Technische Universität München)

October 1999 **Diplom-Ingenieur (diploma), Universität Kaiserslautern, Germany**

1994 - 1999 **Civil Engineering Studies, Universität Kaiserslautern, Germany**
Diploma Thesis Title: "Dynamische Simulation von Brückenbauwerken unter nichtruhender Belastung (Dynamic Simulation of Bridge Constructions subject to Non-Resting Loading)"

June 1993 **Abitur, Kurfürst-Salentin-Gymnasium, Andernach, Germany**

HONORS AND AWARDS

- Richard-von-Mises-Prize of the International Association of Applied Mathematics and Mechanics (GAMM - Gesellschaft für Angewandte Mathematik und Mechanik)

- Feodor Lynen Alumni Research Fellowship of the Alexander von Humboldt-Foundation, Germany

- Elected Member of Emmy Noether Program of the Deutsche Forschungsgemein-schaft (German Research Foundation)

- Finalist of the ECCOMAS Award for the Best European PhD Thesis 2003 on Computational Methods in Applied Sciences and Engineering

- Feodor Lynen Research Fellowship of the Alexander von Humboldt-Foundation, Germany; only one Feodor Lynen Research Fellowship was granted in Engineering in 2004 (113 overall in Humanities, Natural Sciences, and Engineering)

- Postdoctoral Fellowship of the Center for Turbulence Research, Stanford University and NASA Ames Research Center, CA, USA

- Best Graduation in Civil Engineering at Universität Kaiserslautern in the academic year 1999/2000

- Scholarship of the Studienstiftung des deutschen Volkes (German National Academic Foundation); less than 0.5% of all students in Germany were granted this scholarship at that time

FURTHER AWARDS

- Conference Fellowship for the "Second MIT Conference on Computational Fluid and Solid Mechanics" in Cambridge, MA, USA

- DFG (German Research Foundation) Grant for CISM (International Center for Mechanical Sciences) Summer School on "Theories of Turbulence" in Udine, Italy

- CIME (International Mathematical Summer Center) Grant for CIME Course on "Multiscale Problems and Methods in Numerical Simulation" in Martina Franca, Italy

TEACHING

SS 2006-2025	Lecture series "**Finite Elements in Fluid Mechanics**", Technische Universität München
WS 2014/2015-2015/2016	Course "**Advanced Computational Fluid Dynamics**", European School of Computer Aided Engineering Technology Master "Applied Computational Mechanics"
WS 2005/2006-2012/2013	Lecture series "**Numerical Methods for Engineers**", Technische Universität München
SS 2005	Lecture series "**Variational Multiscale Methods in Flow Simulation**", Technische Universität München
April 2005	Short course "**The Variational Multiscale Method – Basics and Large Eddy Simulation of Incompressible Flows**", Georg-August-Universität Göttingen
WS 2000/2001	Seminar series "**The Variational Multiscale Method**", Universität Stuttgart

RESEARCH INTERESTS

- Computational methods for multiphysics and multiscale problems
- Fluid-Structure Interaction (FSI)
- Fluid-Structure-Contact Interaction (FSCI)
- Thermo-Fluid-Structure Interaction (TFSI)
- Thermal Elastohydrodynamic Lubrication (TEHL)
- Uncertainty Quantification (UQ)
- Computational Fluid Dynamics (CFD)
- Turbulent flow and combustion
- Large-eddy simulation (LES)
- Complex fluids
- Electrochemical systems
- Computational Contact Mechanics (CCM)
- Finite Element Method (FEM)
- Finite Volume Method (FVM)

AFFILIATIONS

- The Association of German Engineers (VDI – Verein Deutscher Ingenieure)
- International Association on Computational Mechanics (IACM)
- International Association of Applied Mathematics and Mechanics (GAMM - Gesellschaft für Angewandte Mathematik und Mechanik)
- German Association on Computational Mechanics (GACM)

PROFESSIONAL SERVICES

Reviewer for

- AIAA Journal
- Applied Mathematics and Computation
- Chemical Engineering Science
- Computer Methods in Applied Mechanics and Engineering
- Computer Physics Communications
- Computers & Fluids
- Computing in Science and Engineering
- Engineering Structures
- Flow, Turbulence and Combustion
- International Journal for Numerical Methods in Engineering
- International Journal for Numerical Methods in Fluids
- International Journal of Computing Science and Mathematics
- International Journal of Heat and Fluid Flow
- International Journal of Heat and Mass Transfer
- Journal of Computational and Applied Mathematics
- Journal of Computational Physics
- Journal of Computational Science
- Journal of Turbulence
- Mathematical Models and Methods in Applied Sciences
- Physics of Fluids
- SIAM Journal on Scientific Computing

Member of

- NAFEMS Multiphysics Working Group (since 2013)
- Selection board of the Studienstiftung des deutschen Volkes (German National Academic Foundation, since 2009)

Chairman of local organizing committee for

- 10th International Workshop on Variational Multiscale and Stabilized Finite Elements (February 25-27, 2015)
- 2nd GACM Colloquium on Computational Mechanics (October 10-12, 2007)

Secretary General of local organizing committee for

- 16th International Conference on Finite Elements in Flow Problems (March 23-25, 2011)

Organization of minisymposia at

- 11th World Congress on Computational Mechanics (WCCM XI) together with 5th European Conference on Computational Mechanics (ECCM V) and 6th European Conference on Computational Fluid Dynamics (ECFD VI), Barcelona, Spain, July 20-25, 2013: *Computational modeling of turbulent and complex flows with applications* (together with V.M. Calo, K.E. Jansen, and J. Principe),

- 11th US National Congress on Computational Mechanics (USNCCM 11), Minneapolis/St. Paul, MN, USA, July 25-29, 2011: *Modeling and simulation of complex multiscale flows with particular emphasis on turbulent and reactive flows* (together with V.M. Calo, T.J.R. Hughes, A. Masud, and J. Principe),
- ASME Applied Mechanics and Materials Conference (McMAT-2011), Chicago, IL, USA, May 31 – June 2, 2011: *Computational Methods for (coupled) flow problems* (together with V.M. Calo and A. Masud),
- 16th International Conference on Finite Elements in Flow Problems (FEF 2011), Munich, Germany, March 23-25, 2011: *Modeling and simulation of complex multiscale flows with particular emphasis on turbulent and reactive flows* (together with V.M. Calo, T.J.R. Hughes, A. Masud, and J. Principe),
- 9th World Congress on Computational Mechanics and 4th Asian Pacific Congress on Computational Mechanics (WCCM/APCOM 2010), Sydney, Australia, July 19-23, 2010: *Turbulence modeling and simulation* (together with V.M. Calo, T.J.R. Hughes, and A.T. Martinez)

PUBLICATIONS

Key figures (as of July 2025):
- Scopus: 47 publications, h-index: 20
- ISI: 45 publications, h-index: 19
- Google Scholar: h-index: 27

Articles in Peer-Reviewed International Journals

[1] C.P. Schmidt, S. Sinzig, V. Gravemeier, W.A. Wall, A three-dimensional finite element formulation coupling electrochemistry and solid mechanics on resolved microstructures of all-solid-state lithium-ion batteries, *Computer Methods in Applied Mechanics and Engineering* 417 (2023) 116468.

[2] V. Gravemeier, S.M. Civaner, W.A. Wall, A partitioned-monolithic finite element method for thermo-fluid–structure interaction, *Computer Methods in Applied Mechanics and Engineering* 401 (2022) 115596.

[3] L. Berardocco, M. Kronbichler, V. Gravemeier, A hybridizable discontinuous Galerkin method for electromagnetics with a view on subsurface applications, *Computer Methods in Applied Mechanics and Engineering* 366 (2020) 113071.

[4] U. Rasthofer, V. Gravemeier, Recent developments in variational multiscale methods for large-eddy simulation of turbulent flow, *Archives of Computational Methods in Engineering* 25 (2018) 647-690.

[5] C. Bertoglio, A. Caiazzo, Y. Bazilevs, M. Braack, M. Esmaily-Moghadam, C. Grandmont, V. Gravemeier, A. Marsden, O. Pironneau, I.E. Vignon-Clementel, W.A. Wall, Benchmark problems for numerical treatment of backflow at open boundaries, *International Journal for Numerical Methods in Biomedical Engineering* 34 (2018) e2918.

[6] U. Rasthofer, W.A. Wall, V. Gravemeier, An extended algebraic variational multiscale-multigrid-multifractal method (XAVM4) for large-eddy simulation of turbulent two-phase flow, *Journal of Computational Physics* 359 (2018) 1-19.

[7] B. Schott, U. Rasthofer, V. Gravemeier, W.A. Wall, A face-oriented stabilized Nitsche-type extended variational multiscale method for incompressible two-phase flow, *International Journal for Numerical Methods in Engineering* 104 (2015) 721-748.

[8] U. Rasthofer, G.C. Burton, W.A. Wall, V. Gravemeier, An algebraic variational multiscale-multigrid-multifractal method (AVM^4) for large-eddy simulation of turbulent variable-density flow at low Mach number, *International Journal for Numerical Methods in Fluids* 76 (2014) 416-449.

[9]   A. Ehrl, A. Popp, V. Gravemeier, W. A. Wall, A dual mortar approach for mesh tying within a variational multiscale method for incompressible flow, *International Journal for Numerical Methods in Fluids* 76 (2014) 1-27.

[10] U. Rasthofer, G.C. Burton, W.A. Wall, V. Gravemeier, Multifractal subgrid-scale modeling within a variational multiscale method for large-eddy simulation of passive-scalar mixing in turbulent flow at low and high Schmidt numbers, *Physics of Fluids* 26 (2014) 055108-1-30.

[11] F. Henke, M. Winklmaier, V. Gravemeier, W.A. Wall, A semi-Lagrangean time-integration approach for extended finite element methods, *International Journal for Numerical Methods in Engineering* 98 (2014) 174-202.

[12] M. Ismail, V. Gravemeier, A. Comerford, W.A. Wall, A stable approach for coupling multidimensional cardiovascular and pulmonary networks based on a novel pressure-flowrate or pressure-only Neumann boundary condition formulation, *International Journal for Numerical Methods in Biomedical Engineering* 30 (2014) 447-469.

[13] G. Bauer, P. Gamnitzer, V. Gravemeier, W.A. Wall, An isogeometric variational multiscale method for large-eddy simulation of coupled multi-ion transport in turbulent flow, *Journal of Computational Physics* 251 (2013) 194-208.

[14] C. Danowski, V. Gravemeier, L. Yoshihara, W.A. Wall, A monolithic computational approach to thermo-structure interaction, *International Journal for Numerical Methods in Engineering* 95 (2013) 1053-1078.

[15] A. Comerford, V. Gravemeier, W.A. Wall, An algebraic variational multiscale-multigrid method for large-eddy simulation of turbulent pulsatile flows in complex geometries with detailed insight into pulmonary airway flow, *International Journal for Numerical Methods in Fluids* 71 (2013) 1207-1225.

[16] A. Ehrl, G. Bauer, V. Gravemeier, W.A. Wall, A computational approach for the simulation of natural convection in electrochemical cells, *Journal of Computational Physics* 235 (2013) 764–785.

[17] U. Rasthofer, V. Gravemeier, Multifractal subgrid-scale modeling within a variational multiscale method for large-eddy simulation of turbulent flow, *Journal of Computational Physics* 234 (2013) 79–107.

[18] P. Gamnitzer, V. Gravemeier, W.A. Wall, A mixed/hybrid Dirichlet formulation for wall-bounded flow problems including turbulent flow, *Computer Methods in Applied Mechanics and Engineering* 245-246 (2012) 22-35.

[19] K. Nissen, C.J. Cyron, V. Gravemeier, W.A. Wall, Information-flux method: a meshfree maximum-entropy Petrov-Galerkin method including stabilised finite element methods, *Computer Methods in Applied Mechanics and Engineering* 241-244 (2012) 225-237.

[20] V. Gravemeier, A. Comerford, L. Yoshihara, M. Ismail, W.A. Wall, Neumann inflow boundary conditions in biomechanics, *International Journal for Numerical Methods in Biomedical Engineering* 28 (2012) 560-573.

[21] G. Bauer, V. Gravemeier, W.A. Wall, A stabilized finite element method for the numerical simulation of multi-ion transport in electrochemical systems, *Computer Methods in Applied Mechanics and Engineering* 223-224 (2012) 199-210.

[22] G. Bauer, V. Gravemeier, W.A. Wall, A 3D finite element approach for the coupled numerical simulation of electrochemical systems and fluid flow, *International Journal for Numerical Methods in Engineering* 86 (2011) 1339-1359.

[23] V. Gravemeier, W.A. Wall, Variational multiscale methods for premixed combustion based on a progress-variable approach, *Combustion and Flame* 158 (2011) 1160–1170.

[24] U. Rasthofer, F. Henke, W.A. Wall, V. Gravemeier, An extended residual-based variational multiscale method for two-phase flow including surface tension, *Computer Methods in Applied Mechanics and Engineering* 200 (2011) 1866-1876.

[25] V. Gravemeier, W.A. Wall, Residual-based variational multiscale methods for laminar, transitional and turbulent variable-density flow at low Mach number, *International Journal for Numerical Methods in Fluids* 65 (2011) 1260-1278.

[26] V. Gravemeier, M. Kronbichler, M.W. Gee, W.A. Wall, An algebraic variational multiscale-multigrid method for large-eddy simulation: generalized-alpha time integration, Fourier analysis and application to turbulent flow past a square-section cylinder, *Computational Mechanics* 47 (2011) 217-233.

[27] C.J. Cyron, K. Nissen, V. Gravemeier, W.A. Wall, Information flux maximum-entropy approximation schemes for convection-diffusion problems, *International Journal for Numerical Methods in Fluids* 64 (2010) 1180-1200.

[28] V. Gravemeier, W.A. Wall, An algebraic variational multiscale-multigrid method for large-eddy simulation of turbulent variable-density flow at low Mach number, *Journal of Computational Physics* 229 (2010) 6047-6070.

[29] C.J. Cyron, K. Nissen, V. Gravemeier, W.A. Wall, Stable meshfree methods in fluid mechanics based on Green's functions, *Computational Mechanics* 46 (2010) 287-300.

[30] V. Gravemeier, M.W. Gee, M. Kronbichler, W.A. Wall, An algebraic variational multiscale-multigrid method for large eddy simulation of turbulent flow, *Computer Methods in Applied Mechanics and Engineering* 199 (2010) 853-864.

[31] P. Gamnitzer, V. Gravemeier, W.A. Wall, Time-dependent subgrid scales in residual-based large eddy simulation of turbulent channel flow, *Computer Methods in Applied Mechanics and Engineering* 199 (2010) 819-827.

[32] V. Gravemeier, M.W. Gee, W.A. Wall, An algebraic variational multiscale-multigrid method based on plain aggregation for convection-diffusion problems, *Computer Methods in Applied Mechanics and Engineering* 198 (2009) 3821-3835.

[33] F. van der Bos, V. Gravemeier, Numerical simulation of premixed combustion using an enriched finite element method, *Journal of Computational Physics* 228 (2009) 3605-3624.

[34] V. Gravemeier, W.A. Wall, A space-time formulation and improved spatial reconstruction for the "divide-and-conquer" multiscale method, *Computer Methods in Applied Mechanics and Engineering* 197 (2008) 678-692.

[35] V. Gravemeier, S. Lenz, W.A. Wall, Towards a taxonomy for multiscale methods in computational mechanics: building blocks of existing methods, *Computational Mechanics* 41 (2008) 279-291.

[36] V. Gravemeier, S. Lenz, W.A. Wall, Variational multiscale methods for incompressible flows, *International Journal of Computing Science and Mathematics* 1 (2007) 444-466.

[37] V. Gravemeier, W.A. Wall, A "divide-and-conquer" spatial and temporal multiscale method for transient convection-diffusion-reaction equations, *International Journal for Numerical Methods in Fluids* 54 (2007) 779-804.

[38] V. Gravemeier, Variational multiscale large eddy simulation of turbulent flow in a diffuser, *Computational Mechanics* 39 (2007) 477-495.

[39] V. Gravemeier, A consistent dynamic localization model for large eddy simulation of turbulent flows based on a variational formulation, *Journal of Computational Physics* 218 (2006) 677-701.

[40] V. Gravemeier, The variational multiscale method for laminar and turbulent flow, *Archives of Computational Methods in Engineering - State of the Art Reviews* 13 (2006) 249-324.

[41] V. Gravemeier, Scale-separating operators for variational multiscale large eddy simulation of turbulent flows, *Journal of Computational Physics* 212 (2006) 400-435.

[42] V. Gravemeier, W.A. Wall, E. Ramm, Large eddy simulation of turbulent incompressible flows by a three-level finite element method, *International Journal for Numerical Methods in Fluids* 48 (2005) 1067-1099.

[43] V. Gravemeier, W.A. Wall, E. Ramm, A three-level finite element method for the instationary, incompressible Navier-Stokes equations, *Computer Methods in Applied Mechanics and Engineering* 193 (2004) 1323-1366.

Articles in Other Journals

[44] V. Gravemeier, Variational multiscale methods for large eddy simulation of turbulent flows, *GACM Report* 5 (2008) 8-13.
[45] V. Gravemeier, Current methods for the numerical simulation of turbulent flows, *CADFEM Infoplaner* 1 (2007) 44-45.

PhD Thesis

[46] V. Gravemeier, The variational multiscale method for laminar and turbulent incompressible flow, *PhD Thesis, Report No. 40*, Institut für Baustatik, Universität Stuttgart, 2003, http://www.lnm.mw.tum.de/Members/vgravem/thesis_vgravem.pdf.

Book Chapters

[47] P. Gamnitzer, V. Gravemeier, W.A. Wall, Advances in variational multiscale methods for turbulent flows, in: *Multiscale Methods in Computational Mechanics*, Lecture Notes in Applied and Computational Mechanics, Springer-Verlag, Berlin, Germany, 2010.
[48] M. Mensinger, V. Gravemeier, Dynamische Simulation nichtruhender Belastungen bei Verbundbrücken (Dynamic simulation of non-resting loading for composite bridges), in: *Theorie und Praxis im Konstruktiven Ingenieurbau (Theory and Practice in Construction Engineering)*, festschrift in honor of Prof. Dr.-Ing. Helmut Bode, W. Ramm, T. Däuwel, H.-J. Kronenberger (eds.), ibidem-Verlag, Stuttgart, Germany, 2000, 547-557.

CTR Annual Research Briefs and Proceedings of the Summer Program

[49] V. Gravemeier, Towards an extended algebraic variational multiscale-multigrid method for turbulent premixed combustion based on a combined *G*-equation/progress-variable approach, in: *Annual Research Briefs - 2010*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2010, 185-196.
[50] V. Gravemeier, Variational multiscale large eddy simulation of turbulent flow in a planar asymmetric diffuser, in: *Annual Research Briefs - 2005*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2005, 257-268.
[51] V. Gravemeier, A consistent dynamic localization model for large eddy simulation based on a variational formulation, in: *Annual Research Briefs - 2005*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2005, 183-194.
[52] V. Gravemeier, Variational multiscale large eddy simulation of turbulent flows using a finite volume method, in: *Annual Research Briefs - 2004*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2004, 131-144.
[53] A.A. Oberai, V. Gravemeier, G.C. Burton, Transfer of energy in the variational multiscale formulation of LES, in: *Proceedings of the Summer Program 2004*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2004, 123-132.

Technical Reports

[54] V. Gravemeier, Scale-separating operators for variational multiscale large eddy simulation of turbulent flows, *CTR Manuscript 187*, Center for Turbulence Research, Stanford University and NASA Ames Research Center, 2004 (extended version of respective article of the same title in peer-reviewed international journal).

[55] V. Gravemeier, W.A. Wall, E. Ramm, Large eddy simulation of turbulent incompressible flows by a three-level finte element method, *SFB 404 Report 2004/07*, 2004 (principally identical to respective article of the same title in reviewed international journal).

[56] V. Gravemeier, W.A. Wall, E. Ramm, A three-level finite element method for the instationary, incompressible Navier-Stokes equations, *SFB 404 Report 2003/26*, 2003 (extended version of respective article of the same title in reviewed international journal).

Reviewed Conference Proceedings

[57] V. Gravemeier, U. Rasthofer, A variational multiscale method with multifractal subgrid-scale modeling for large-eddy simulation of turbulent flow, Preprint, submitted for publication in: *Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering (ECCCOMAS 2012)*, J. Eberhardtsteiner *et al.* (Eds.), Vienna, Austria, September 10-14, 2012.

[58] M. Ismail, V. Gravemeier, A. Comerford, W.A. Wall, Neumann boundary conditions in coupled 3D-0D biofluid networks, in: *Proceedings of the First ECCOMAS Young Investigators Conference (YIC 2012)*, A. Andrade-Campos, N. Lopes, R.A.F. Valente, H. Varum (Eds.), Aveiro, Portugal, April 24-27, 2012.

[59] C. Danowski, V. Gravemeier, U. Küttler, M.W. Gee, W.A. Wall, A monolithic approach to thermo-structure interaction in rocket nozzles, in: *Proceedings of the Fourth European Conference for Aerospace Sciences*, Saint Petersburg, Russia, July 4-8, 2011, Publisher: Torus Press.

[60] V. Gravemeier, S. Lenz, W.A. Wall, Variational multiscale methods for incompressible flows, in: *Proceedings of the International Conference on Boundary and Interior Layers (BAIL 2006)*, G. Lube, G. Rapin (Eds.), Göttingen, Germany, July 24-28, 2006, http://www.num.math.uni-goettingen.de/bail.

[61] V. Gravemeier, Variational multiscale large eddy simulation of turbulent flows using a two-grid finite element or finite volume method, in: *Numerical Mathematics and Advanced Applications (ENUMATH 2005)*, A. Bermudez de Castro *et al.* (Eds.), Santiago de Compostela, Spain, July 18- 22, 2005, Publisher: Springer-Verlag, 2006, 788-795.

[62] V. Gravemeier, A two-grid finite volume method for variational multiscale large eddy simulation of turbulent flows, in: *Proceedings of the Third MIT Conference on Computational Fluid and Solid Mechanics*, K.J. Bathe (Ed.), Cambridge, MA, USA, June 14-17, 2005, Publisher: Elsevier, 2005, 654-657.

[63] V. Gravemeier, W.A. Wall, E. Ramm, Numerical solution of the incompressible Navier-Stokes equations by a three-level finite element method, in: *Proceedings of the Second MIT Conference on Computational Fluid and Solid Mechanics*, K.J. Bathe (Ed.), Cambridge, MA, USA, June 17-20, 2003, Publisher: Elsevier, 2003, 915-918.

[64] V. Gravemeier, W.A. Wall, E. Ramm, A three-level approach for incompressible Navier-Stokes, in: *Proceedings of the Fifth World Congress on Computational Mechanics (WCCM V)*, H.A. Mang, F.G. Rammerstorfer, J. Eberhardtsteiner (Eds.), Vienna, Austria, July 7-12, 2002, Publisher: Vienna University of Technology, Austria, ISBN 3-9501554-0-6, 2002.

Conference Proceedings

[65] V. Gravemeier, U. Rasthofer, A variational multiscale method with multifractal subgrid-scale modeling for large-eddy simulation of turbulent flow, in: *Computational Mechanics 2012 - Proceedings of the Tenth World Congress on Computational Mechanics (WCCM X)*, Sao Paulo, Brazil, July 8-13, 2012.

[66] F. Henke, V. Gravemeier, Numerical simulation of premixed combustion combining level set with extended finite element methods, in: *Proceedings of XFEM 2009*, T.P. Fries and A. Zilian (Eds.), Aachen, Germany, September 28-30, 2009.

[67] V. Gravemeier, W.A. Wall, A "divide-and-conquer" spatial and temporal multiscale method for transient convection-diffusion-reaction equations, in: *Proceedings of the ECCOMAS Thematic Conference on Multi-scale Computational Methods for Solids and Fluids*, A. Ibrahimbegovic et al. (Eds.), Cachan, France, November 28-30, 2007.

[68] V. Gravemeier, M. Kronbichler, W.A. Wall, Variational multiscale methods for large eddy simulation of turbulent flows: Fourier analysis and application to diffuser flow, in: *Proceedings of the Fifth International Symposium on Turbulence and Shear Flow Phenomena (TSFP 5)*, N. Adams, J. Eaton, R. Friedrich (Eds.), Munich, Germany, August 27- 29, 2007.

Diploma Thesis

[69] V. Gravemeier, Dynamische Simulation von Brückenbauwerken unter nichtruhender Belastung (Dynamic simulation of bridge constructions subject to non-resting loading), Diploma Thesis, Fachgebiet Stahlbau (Chair of Steel Construction), Universität Kaiserslautern, 1999.

Study Work

[70] V. Gravemeier, Untersuchungen zur Maßgeblichkeit des Durchstanznachweises und des Schubspannungsnachweises nach DIN 1045 (7.88) bei punktförmig gestützten Platten mit Stützenkopfverstärkung (Pilzdecken), Studienarbeit (Study Work), Fachgebiet Massivbau und Baukonstruktion (Chair of Concrete and Building Construction), Universität Kaiserslautern, 1999.

[71] V. Gravemeier, Ermittlung von Beanspruchungskollektiven von Kopfbolzendübeln als Schubverbindung in der Verbundfuge von Straßenbrücken in Verbundbauweise, Studienarbeit (Study Work), Fachgebiet Stahlbau (Chair of Steel Construction), Universität Kaiserslautern, 1998.