Prof. Dipl.-Ing. Dr. Günther Meschke
Institute for Structural Mechanics
Ruhr University Bochum
D-44780 Bochum

Curriculum Vitae

Education:

1958.08.27	Born in Vienna, Austria
1964 - 1968	Primary school, Vienna
1968 - 1976	Goethe-High School, Vienna, Austria
1976 - 1977	Military service (8 months)
1977 - 1983	Diploma Study Civil Engineering, Vienna University of Technology, Austria
Nov. 1983	Approbation of the diploma thesis ("with distinction')
Dec. 1983	Graduation (with honors) to Dipl.-Ing.
May 1989	Approbation of the dissertation (with distinction)
June 1989	Graduation (with honors) to Dr. techn.
30. Oct. 1996	*Venia Legendi* in Structural Mechanics

Professional Career:

Feb. 1984 - Mar. 1988	Research assistant, Institute for Strength of Materials, Vienna University of Technology (Head: Prof. H.A. Mang)
Apr. 1988 - Oct. 1996	University assistant, Institute for Strength of Materials, Vienna University of Technology
Dec. 1990 - Jan. 1992	Research associate, Stanford University, California, USA
Oct. 1996 - Aug. 1998	Associate Professor, Vienna University of Technology
since 1. Sept. 1998	Full Professor, Institute for Structural Mechanics, Ruhr University Bochum, Germany
Oct. 2001 - Oct. 2004	Director of Institute for Structural Engineering, Ruhr University Bochum, Germany
2003 - Sept. 2004	Vice Dean of the Faculty for Civil Engineering, Ruhr University Bochum, Germany
Oct.2004 - Sept. 2006	Dean of the Faculty for Civil Engineering, Ruhr University Bochum, Germany
Since July 2010	Spokesman of the Collaborative Research Project (SFB 837) „Interaction modeling for mechanized tunneling“

July 2012	Offer for Professorship „Structural Analysis“ at Graz University of Technology, declined
2010 - 2021	Founding Director and Spokesman of the Research Department „Subsurface Modeling and Engineering“
2016 - 2020	Member of the Review Board for the Section „Applied Mechanics, Statics and Dynamics“ of the German Science Foundation
2016 - 2021	Member of the Austrian Science Board
since March 2024	Advisory Professor at Tongji University, China
since Nov. 2021	Vice Rector for Research and Transfer, Ruhr University Bochum, Germany

Honors and Awards

Dec. 1989	Award of a Max Kade stipend by the Austrian Academy of Sciences
Oct.1996	Advancement Award for the Sciences of the City of Vienna
Dec. 1997	Kardinal-Innitzer-Award
Since May 2010	Member of the Academy of Sciences and the Arts of Northrine-Westphalia
Since Oct.2010	Member of the German Academy of Science and Engineering (acatech)
Since May 2012	Corresponding Member of the Austrian Academy of Sciences
Sept. 2014	EUREKA-Innovation-Award 2014 in Category “Innovator of Tomorrow”
Since Sept. 2017	Member of the Academia Europaea
April 2023	Austrian Cross of Honors for Science and Art
Sept. 2023	Best Paper Award at Euro-Par 2023

Academic Activities

since 1998	Member in various committees of the Faculty of Civil Engineering, Ruhr University Bochum, Germany
2005 - 2006	Chair of the Dean's conference of Ruhr University Bochum
2017 - 2021	Member of the Programme Accreditation Commission of ASIIN
2017 - 2021	Member of the Senate of Ruhr University Bochum, Deputy Spokesman of Professors Curia

Scientific Activities

- Author of 1 Book
- Co-editor of 3 Books and 15 conference proceedings
- Co-author of 13 Book-Chapters
- Co-Organizer of 14 international conferences and 44 Minisymposia
- 496 scientific papers (thereof 215 papers in international peer-reviewed scientific journals)

Editorships and Membership in Editorial Boards of Scientific Journals

- Co-Editor-in-Chief of "European Journal of Environmental and Civil Engineering" (Taylor and Francis) (since April 2020)
- Co-Editor-in-Chief of "Engineering Structures" (Elsevier) (2020-2023)
- Associate Editor of "Modeling" (MDPI) (since July 2020)

- Engineering Structures (Advisory Board since August 2023)
- Advances in Engineering Software (Editorial Board since August 2023)
- Computer Methods in Applied Mechanics and Engineering (Editorial Advisory Board since January 2022)
- Tunnel and Large Underground Works (Editorial Board since January 2021)
- Underground Space (Editorial Board since January 2016)
- Computers and Geotechnics (Editorial Board since January 2015)
- International Journal for Numerical and Analytical Methods in Geomechanics (Editorial Board since 2013)
- Engineering Structures (Editorial Board 2005-2020)
- Computers and Concrete (Editorial Board since March 2003)

Membership in Scientific Associations

- Vice-President of the German Association for Computational Mechanics (GACM) (since January 2021)
- Executive Board of the Association „Baustatik-Baupraxis" (since Oct.2015)
- Board of Directors of the International Association of Fracture Mechanics for Concrete and Concrete Structures (FramCos) (since 2019)
- General Council of the Int. Association for Computational Mechanics (IACM) (since 2017)
- Task Group TG 2.4.2 „Modeling of Fibre Reinforced Concrete Structures" of the International Federation for Structural Concrete (fib) (since January 2015)
- Gesellschaft für angewandte Mechanik und Mathematik (GAMM) (since 1995)
- ASCE-Engineering Mechanics Division: Member of Committee of Properties of Materials (since 2000)
- American Association for Civil Engineering (ASCE) (since 1997)
- German Association for Computational Mechanics (GACM) (since 1999)

Teaching

- Initiator of new International Master program „Subsurface Engineering“, starting in 2022
- Lectures held in the field of Structural Analysis (Bachelor program Civil Engineering), Linear and Nonlinear Finite Element Methods, Computational Structural Dynamics, Numerical Simulation in Tunneling, Constitutive Modeling of Soils and other inelastic materials (Master program Civil Engineering, International Master Programs Computational Engineering and Subsurface Engineering), Recent advances in Computational Mechanics, in German and English language.

Areas of Research

Theoretical and applied research in computational structural mechanics with emphasis on computational simulations in tunneling and subsurface engineering, multi-scale and multi-physics models for various classes of materials (geotechnical materials, concrete, steel and fiber reinforced concrete, cementitious materials) and associated (multi-field) finite element methods. Durability-oriented modeling and life-time analyses of concrete and reinforced concrete structures. Advanced discretization methods for fracture and fragmentation analysis of brittle and quasi-brittle materials. Computational simulation of rock excavation and tunnel construction processes, machine learning methods and uncertainty modeling in subsurface engineering.

Engineering professional activities:

Cooperation with industrial partners in research and development, scientific advice on the design and analysis of engineering structures and expert opinions on damage cases, cooperation with software developers in development of finite element models.

(Co-) Organization of Scientific Conferences and Minisymposia

1. Conference on Computational Modelling of Concrete Structures (EURO-C 1998), Bad Gastein, Austria, 31. March - 3. April 1998, with Prof. R. de Borst (TU-Delft), Prof. N. Bićanić (University Glasgow, UK) and Prof. H.A. Mang (TU Vienna, Austria)
2. Minisymposium „From Material Modelling to Structural Design“ in the framework of ASCE- Structures Congress 1999, New Orleans, USA, 18.-21. April 1999, with Prof. F. Ulm (MIT, USA)
3. Minisymposium „Computational Concrete Mechanics“ in the framework of 5. US-National Congress on Computational Mechanics, Boulder, USA, 4.-6. August 1999, with Prof. H.A. Mang (TU Vienna, Austria)
4. Minisymposium „Engineering Applications with emphasis on Multifield Problems“ in the framework of 2nd European Conference on Computational Mechanics, Krakow, Polen, 26.-29. June 2001, with Prof. H.A. Mang (TU Vienna, Austria)
5. Minisymposium „Computational Durability Mechanics“ in the framework of 5th World Congress on Computational Mechanics, Wien, Austria, 7.-12. July 2002, with Prof. F. Ulm (MIT, USA)

6. Conference on Computational Modelling of Concrete Structures (EURO-C 2003), St. Johann in Pongau, Austria, 17.-20. March 2003, with Prof. R. de Borst (TU-Delft), Prof. N. Bićanić (University Glasgow, UK) and Prof. H.A. Mang (TU Vienna, Austria)

7. Minisymposium „Computational Modelling in Tunneling“ in the framework of 7. Konferenz „Computational Plasticity - Fundamentals and Applications“ (COMPLAS), Barcelona, Spanien, 7.-10. April 2003

8. Minisymposium „Computational Geomechanics and Environmental Mechanics with Coupled Problems“, in the framework of 6. World Congress on Computational Mechanics, Peking, China, 5.-10. Sept. 2004, with Prof. X. Li (Dalian, China) and Prof. B. Schrefler (University Padova, Italy)

9. EUROMECH-Kolloquium „Numerical Analysis of Concrete Cracking“, Innsbruck, Austria, 21.-23. February 2005, with Prof. G. Hofstetter (University Innsbruck, Austria)

10. Minisymposium „Modeling and Simulation of Multifield Problems“ in the framework of 5th International Conference on Computation of Shell and Spatial Structures (IASS-IACM 2005), Salzburg, Austria, 1.-4. June 2005, with Dr. D. Kuhl (Ruhr University Bochum, Germany)

11. 1st GACM Colloquium for Young Scientists on Computational Mechanics, Bochum, Deutschland, 5.-7. Oktober 2005, with Prof. K. Hackl (Ruhr University Bochum, Germany) and Prof. S. Reese (RWTH-Aachen, Germany)

12. Conference on Computational Modelling of Concrete Structures (EURO-C 2006), Mayerhofen, Austria, 17.-20. March 2006, with Prof. R. de Borst (TU-Delft), Prof. N. Bićanić (University Glasgow, UK) and Prof. H.A. Mang (TU Vienna, Austria)

13. Minisymposium „Computational Methods in Durability and Environmental Mechanics“, in the framework of 7. World Congress on Computational Mechanics, Los Angeles, 16.-22. July 2006, with Prof. X. Li (Dalian, China) and Prof. B. Schrefler (University Padova, Italy)

14. 7 Sessions zum Thema „Coupled problems“ in the framework of ICIAM/GAMM 2007 Konferenz, ETH Zürich, Switzerland, 16.-20. July 2007, Oct.Prof. M. Kamlah (Forschungszentrum Karlsruhe, Germany)

15. 1st International Conference on Computational Modelling in Tunnelling (EURO:TUN 2007), Wien, Austria, 27.-29. August 2007 with Prof. J. Eberhardsteiner (TU Vienna), Prof. H.A. Mang (TU Vienna, Austria), Prof. C. Hellmich (TU Vienna, Austria) and Prof. W. Schubert (TU-Graz, Austria)

16. Minisymposium „Numerical Modeling of Coupled Problems in Geo- and Durability Mechanics“ in the framework of 8. World Congress on Computational Mechanics, Venedig, Italien, 30. June - 04. July 2008, with Prof. X. Li (Dalian, China)

17. Minisymposium „Computational Models for Fracture and Degradation of Structures“, in the framework of 6. International Conference on Shell and Spatial Structures-Spanning Nano to Mega“, Cornell University, USA, 28.-31. May 2008, with Prof. J. Rots (TU-Delft, The Netherlands)

18. Workshop „Technology Innovation in Underground Construction“, in the framework of World Tunneling Congress, Budapest, Ungarn, 26. May 2009

19. International Workshop „Advanced in Numerical Simulation and Knowledge-Based Methods in Tunneling“, Ruhr University Bochum, 08. Sept. 2009, with Prof. G. Beer (TU-Graz), Prof. G. Exadaktylos (TU-Crete, Greece), Prof. D. Hartmann (Ruhr University Bochum, Germany), Dr. B. Pichler (TU Vienna, Austria), Prof. W. Schubert (TU-Graz, Austria)

20. 2nd International Conference on Computational Methods in Tunnelling (EURO:TUN 2009), Bochum, Germany, 09.-11. Sept. 2009, with Prof. G. Beer (TU-Graz, Austria), Prof. J. Eberhardsteiner (TU Vienna, Austria), Prof. D. Hartmann (Ruhr University Bochum, Germany), Prof. M. Thewes (Ruhr University Bochum, Germany)

21. International Conference on Computational Modeling of Concrete Structures (EURO-C 2010), Rohrmoos/Schladming, Austria, 15.-18. March2010, with Prof. R. de Borst (TU Eindhoven, The Netherlands), Prof. N. Bicanic (University Glasgow, UK), Prof. H.A. Mang (TU Vienna, Austria)

22. Minisymposium „Fracture Modeling in the Context of Multiphase Materials“, International Conference on Computational Modeling of Fracture and Failure of Materials and Structures (CFRAC 2011), Barcelona, Spain, 6.-8. Juni 2011, with Prof. B. Schrefler (University Padova, Italy), Prof. G. Hofstetter (University Innsbruck, Austria) and Prof. A. Jefferson (Cardiff University, UK)

23. Minisymposium (Honorary Session on the occasion of Prof. Bazant's 75th birthday) „Cementitious materials: Experiments and modeling across the scales“, 2012 Conference of the Engineering Mechanics Institute (EMI 2012), 17.-20. June 2012, with Prof. F. Ulm (MIT, USA), Prof. J. van Mier (ETH Zürich, Switzerland) and Prof. B. Pichler (TU Wien, Austria)

24. 3rd International Conference on Computational Methods in Tunnelling (EURO:TUN 2013), Bochum, Germany, 17.-19. April 2013, with Prof. J. Eberhardsteiner (TU Vienna, Austria), Prof. T. Schanz (Ruhr University Bochum, Germany), Prof. K. Soga (Cambridge University, UK), Prof. M. Thewes (Ruhr University Bochum, Germany)

25. Minisymposium „Multiscale modeling of transport phenomena and failure in porous material“, 5th Biot Conference 2013, Cementitious materials: Experiments and modeling across the scales“, 10.-12. July 2013, Wien, Austria, with J.J. Timothy (Ruhr University Bochum, Germany)

26. Minisymposium „Cementitious materials: Experiments and modeling across the scales“, 2013 Conference of the Engineering Mechanics Institute (EMI 2013), Northwestern University, Evanston, 4.-7. August 2013, with Prof. J. van Mier (ETH Zürich, Switzerland), Prof. B. Pichler (TU Vienna, Austria) and Prof. F. Ulm (MIT, USA)

27. Conference on Computational Modelling of Concrete and Concrete Structures (EURO-C 2014), St. Anton am Arlberg, Austria, 24.-27. March2014, with Prof. N. Bićanić (University Glasgow, UK) and Prof. H.A. Mang (TU Vienna, Austria)

28. Workshop „Computational Modeling of Alkali Silica Reaction“, 09. April 2014, Ruhr University Bochum, Germany.

29. Special Session „Recent Advances in Tunneling and Underground Space Research“ in the framework of Geoshanghai 2014, Shanghai, China, 26.-28. May 2014, with Prof. W. Ding (Tongji University, China), Prof. R. Galler (Montan Universität Leoben, Austria), Dr. X. Liu (Tongji University, China), Prof. H. Schweiger (TU Graz, Austria), Prof. K. Soga (University Cambridge, UK), Prof. M. Thewes (Ruhr University Bochum, Germany), Dr. D. Zhang (Tongji University, China)

30. Minisymposium „Computational Modelling in Underground Construction“, 14th IACMAG Conference, 22.-25. Sept. 2014, Kyoto, Japan, with K. Soga (Cambridge University, UK), Y. Yuan (Tongji University, China)

31. Special Session „Computational Intelligence in Structural Mechanics“ in the framework of 3rd International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering (CSC 2013), Cagliari, Sardinia, Italien, 3.-6. Sept. 2013, with Dr. S. Freitag (SFB837/ Ruhr University Bochum, Germany), Prof. W. Graf (TU Dresden, Germany) and Prof. R.L. Muhanna (Georgia Institute of Technology, USA)

32. Minisymposium „Computer Aided Steering in Engineering“, 11th. World Congress on Computational Mechanics (WCCM2014), Barcelona, 10.-25. July 2014, with Dr. S. Freitag (Ruhr University Bochum, Germany), Prof. D. Hartmann (Ruhr University Bochum, Germany) and Dr. J. Stascheit (Maidl Tunnel Consult, Germany)

33. Minisymposium „Recent Advances in Tunneling and Underground Space Research“, Geoshanghai 2014, 27. May 2014, Shanghai, China, with Prof. W. Ding (Tongji University) Prof. R. Galler (University of Leoben), Xian Liu (Tongji University), Prof. H. Schweiger (Graz University of Technology) Prof. K. Soga (The University of Cambridge), Prof. M. Thewes (Ruhr University Bochum, Germany) and Dr. D. Zhang (Tongji University, China)

34. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2014, 05.-08. August 2014, McMaster Universtiy, Canada, with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

35. Minisymposium „Computational Modelling in Underground Constructions“, IACMAG 2014, 22.-25. September 2014, Kyoto, Japan, with Prof. K. Soga (Cambridge University, UK) and Prof. Y. Yuan (Tongji University, China)

36. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2015, 16.-19. June 2015, Stanford University, USA, with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

37. Special session „Surrogate Modelling in Structural Mechanics“, 4th Int. Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering (CSC

2015), 01.-04. Sept. 2015, Prague, with Dr. S. Freitag (Ruhr University Bochum), Prof. M. Graf (TU-Dresden) and Prof. R.L. Muhana (Georgia Institute of Technology, USA)

38. Special session „Numerical Modeling of Concrete Structures“, XIII International Conference on Computational Plasticity - Fundamentals and Applications (COMPLAS XIII), 01.-03. Sept. 2015, Barcelona, Spain, with Prof. P. Marovic (University of Split, Croatia) and Prof. M. Galic (University of Split, Croatia)

39. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2016, 22.-25. July 2016, Vanderbildt University, USA, jointly with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

40. Minisymposium „Computational modeling of hydraulic fracturing“, ECCOMAS Congress 2016, 05.-10. June 2016, Crete, http://www.eccomas2016.org, with Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. G. Cusatis (Northwestern University, USA)

41. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2017, 05.-08. Juni 2017, San Diego, USA, , mit Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

42. 13. Conference „Baustatik-Baupraxis“, Ruhr-University Bochum, 20.-21. März 2017, jointly with Dr. S. Freitag (Ruhr University Bochum, Germany), Prof. C. Birg und Prof. J. Menkenhagen (University Duisburg-Essen, Germany) und Prof. T. Ricken (TU Dortmund, Germany)

43. 4th Int. Conference on Computational Methods in Tunneling and Subsurface Engineering (EURO:TUN 2017), 18-20.04.2017, Universität Innsbruck, http://www.eurotun2017.com, jointly with Prof. G. Hofstetter (University Innsbruck, Austria), Prof. K. Bergmeister (Universität für Bodenkultur, Austria), Prof. J. Eberhardsteiner (Vienna University of Technology, Austria) und Prof. H.F. Schweiger (TU Graz, Austria)

44. Minisymposium „Computational Geomechanics“, 14th US National Conference on Computational Mechanics (USNCCM14), 17.-20. Juli 2017, Montreal, Canada, jointly with Prof. R. Borja (Stanford University, USA), W. Sun (Columbia University, USA) und P. Newell (Sandia National Laboratories, USA).

45. Conference on Computational Modelling of Concrete and Concrete Structures (EURO-C 2018), Bad Hofgastein, Austria, 26. February - 1. March 2018, jointly with Prof. B. Pichler (TU Vienna, Austria) and Prof. J. Rots (TU-Delft).

46. Minisymposium „Cementitious Materials: Experiments and Modeling Across the Scales“, ASCE - Engineering Mechanics Conference (EMI 2018) 29.05.- 01.06.2018, MIT, USA, gemeinsam mit Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, Frankreich) and Prof. F. Ulm (MIT, USA)

47. Minisymposium „Multiscale models for fracture and durability of concrete and cementitious composites“, World Congress on Computational Mechanics, 22-27.07.2018, New York, USA, with Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, Frankreich) und Dr. J.J. Timothy (Ruhr-University Bochum)

48. Minisymposium „Advanced Strategies for Computational Material Failure“, European Solid Mechanics Conference (ESMC), 02-06.07.2018, Universität Bologna, Italy, with Prof. A. Simone (Universität Pavia, Italy)

49. Minisymposium „Computational Mechanics of Concrete and Concrete Structures“, European Conference on Computational Mechanics (ECCM), 11-15.06.2018, Glasgow, UK, with Prof. R. de Borst (Universität Sheffield, UK) and Prof. H. Mang (TU Vienna)

50. Special Session „Underground Construction“, China-Europe Conference on Geotechnical Engineering, 13.08.2018, Wien, Austria, with Prof. H. Zhu (Tongji Universität, China)

51. Special Session „Tunneling“, 14. Conference „Baustatik-Baupraxis“, University Stuttgart, 20.-21. März 2021, jointly with Dr. S. Freitag (Ruhr University Bochum, Germany) and Prof. G. Hofstetter (University Innsbruck)

52. Minisymposium „ Computational Modeling of Durability and Failure of Cementitious Materials and Composites across Scales“, 14th ECCOMAS-WCCM Congress, June, 2021, Paris, France, with Dr. J.J. Timothy (Ruhr University Bochum and Prof. C. Hellmich, TU Vienna)

53. 5th Int. Conference on Computational Methods in Tunneling and Subsurface Engineering (EURO:TUN 2017), 28-29.10.2021, Ruhr University Bochum, jointly with Prof. G. Hofstetter (University Innsbruck, Austria), Prof. C. Pichler (Vienna University of Technology, Austria), Prof. M. Thewes (Ruhr University Bochum), Prof. H. Zhou (Tongji University, China)

54. Conference on Computational Modelling of Concrete and Concrete Structures (EURO-C 2022), Vienna, Austria, 22.-24. March 2022, jointly with Prof. J. Rots (TU Delft) and Prof. C. Pichler (TU Vienna)

55. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2022, 31.05.-03.06.2022, John Hopkins University, USA, jointly with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

56. Minisymposium „Computational Analysis of Concrete in an experimental-computational Lab“, ECCOMAS 2022, 05.-09. June 2022, Oslo, Norway, jointly with Prof. J. Schröder and Dr. Brands (University Duisburg-Essen), S. Anders (University Wuppertal) and Prof. M. Kaliske (Technical University Dresden).

57. International Conference on Computational Methods and Information Modeling in Tunneling, Bochum, German, 22.-24. June 2022, jointly with Prof. M. Thewes (Ruhr University Bochum), Prof. H. Zhu (Tongji University, China) and Prof. B. Pichler (TU Vienna)

58. Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2023, 06.06.-09.06.2023, Georgia Tech, Atlanta, USA, jointly with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

Supervision and Co-Supervison of Ph.D. Theses:

1. S. Grasberger: Gekoppelte hygromechanische Materialmodellierung und numerische Simulation langzeitiger Degradation von Betonstrukturen, (2nd referee: Prof. O. T. Bruhns (Ruhr University Bochum, Germany)), 19.07.2002

2. J. Mosler: Finite Elemente mit sprungstetigen Abbildungen des Verschiebungsfeldes für numerische Analysen lokalisierter Versagenszustände in Tragwerken, (2nd referee: Prof. K. Hackl (Ruhr University Bochum, Germany)), 05.12.2002

3. F. Bangert: Gekoppelte chemo-mechanische Modellierung und numerische Simulation langzeitiger Degradation von Betonstrukturen, (2nd referee: Prof. D. Dinkler (TU-Braunschweig, Germany)), 12.07.2004

4. T. Kasper: Finite Elemente Simulation maschineller Tunnelvortriebe in wassergesättigtem Lockergestein, (Additional referees: Prof. D. Stein (Ruhr University Bochum, Germany), Prof. G. Beer (TU-Graz, Austria)), 20.07.2004

5. S. Müller: Entwicklung eines Stoffmodells für Holzwerkstoffe zum Zwecke dreidimensionaler FE-Simulationen des Tragverhaltens neuartiger Befestigungsmittel in Spanplatten, (2nd referee: Prof. O.T. Bruhns (Ruhr University Bochum, Germany)), 07.03.2005

6. P. Dumstorff: Modellierung und Simulation von Rissfortschritt in spröden und quasispröden Materialien auf Basis der *Extended Finite Element Method*, (2nd referee: Prof. K. Hackl (Ruhr University Bochum, Germany)), 22.12.2005

7. O. Kintzel: Modellierung elastoplastischen Materialverhaltens und duktiler Porensch-Sept.digung metallischer Werkstoffe bei grossen Deformationen (Additional referees: Prof. K. Hackl (Ruhr University Bochum, Germany), Prof. Itzkov (RWTH Aachen, Germany)), Mai 2006

8. C. Becker: Finite Elemente Methoden zur räumlichen Diskretisierung von Mehrfeldproblemen der Strukturmechanik unter Berücksichtigung diskreter Risse, (2nd referee: Prof. K. Hackl (Ruhr University Bochum, Germany)), 06.07.2007

9. J.H. Hommel: Mechanismenorientierte Simulation von Kurzeitermüdung metallischer Werkstoffe (2nd referee: Prof. K. Hackl (Ruhr University Bochum, Germany)), 15.08.2007

10. S. Jox: 3D hygromechanische Modellierung von Rissbildung in Verbindung mit Feuchtetransport in Betonstrukturen auf Basis der *Extended Finite Element Method*, (2nd referee: Prof. K. Hackl (Ruhr University Bochum, Germany)), 27.10.2008

11. R. Grytz: Computational Modeling and Remodeling of Human Eye Tissues as Biomechanical Structures at Multiple Scales (Additional referees: Prof. S. Reese (TU-Braunschweig, Germany), Prof. Jonas (Universitätsklinik Heidelberg, Germany)), 05.12.2008

12. F. Nagel: Numerical modelling of partially saturated soil and simulation of shield supported tunnel advance (2nd referee: Prof. T. Schanz (Ruhr University Bochum, Germany)), 16.12.2009

13. E. Rumanus: Ein mikromechanisch orientiertes numerisches Schädigungsmodell für Stahlbeton unter Einbeziehung von hygro-mechanischen Einwirkungen (2nd referee: Prof. P. Mark (Ruhr University Bochum, Germany)), 22.01.2010

14. J. Stascheit: Computational methods for large scale simulations of mechanized tunneling, (2nd referee: Prof. D. Hartmann (Ruhr University Bochum, Germany)), Juni 2010

15. M. Zhou: Computational Simulation of Soil Freezing: Multiphase Modeling and Strength Upscaling, (2nd referee: Prof. A. Gens (UPC Barcelona, Spain)), 14.03.2014

16. J. Ninić: Computational Strategies for predictions of the soil-structure interaction during mechanized tunneling, (Additional referees: Prof. D. Dias (University Grenoble, France), Prof. M. Thewes (Ruhr University Bochum, Germany)), 31.03.2015

17. D. Leonhart: Entwicklung numerischer Methoden zur Berechnung von multipler Rissausbreitung in teil- und vollgesättigten porösen Materialien auf Basis der Extended Finite Element Method, (Additional referee: Prof. T. Fries (Graz University of Technology), 26.08.2016

18. Y. Zhan: Multi-level Modeling of Fiber Reinforced Concrete and Application to Numerical Simulations of Tunnel Lining Segments, (Additional referees: Prof. M. Di Prisco (Polytecnico Milano), Prof. P. Mark (Ruhr-Universität Bochum)), 31.10.2016

19. J. J. Timothy: Analytical and Computational Models for the Effective Properties of Disordered Microcracked Porous Materials, (Additional referees: Prof. Hellmich (TU Wien), Prof. G. Pijaudier-Cabot (University de Pau et des Pays de l'Adour)), 25.11.2016

20. A. Alsahly: Advanced Computational Techniques for Mechanized Tunneling along arbitrary Alignments and Tunnel Face Stability Analysis (Additional referees: Prof. C. Callari (University Molise, Italy), 20.12.2017

21. C. Zhao: A Contribution to Numerical Modeling of Mechanized Tunnel Excavation (Additional referees: H. Schweiger (TU Graz), D. Potts (Imperial College London), 15.3.2018

22. B.T. Cao, Simulation and Monitoring Assisted Real-time Steering with Uncertainty in Mechanized Tunneling (Additional referees: Prof. M. Thewes (Ruhr-University Bochum), Prof. M. Kaliske (TU Dresden), 17.12.2018

23. A. Marwan Computational Analysis of Segmental Linings in Mechanized Tunneling (Additional referees: Prof. P. Mark (Ruhr University Bochum), Prof. M. Zaki (Minha University, Egypt)), 15.07.2019

24. R. Berg-Jahnke Kraftbasiertes Prognoseverfahren für Erschütterungen durch dynamische Verdichtungsgeräte im Erd- und Asphaltbau, (Additional referees: Prof. D. Adam (TU Vienna), Dr. D. Heiland (Hon.Prof. RUB)), 21.01.2021

25. G.H. Bui, Cut Finite Element Methods for Efficient Computational Simulations in Mechanized Tunneling, (Additional referees: Prof. D. Schillinger (University Hannover), Prof. J. Ninic (University Nottingham, UK)), 30.03.2021

26. A. Leon Bal, Numerical Modeling and Simulation of Excavation Processes of Soft Soils in Mechanized Tunneling, (Additional referees: Prof. Josep Maria Carbonell (Technical University Barcelona)), 03.02.2023

27. T. Iskhakov, Cementitious Composites: Material Modeling Across Multiple Scales, (Additional referees: Prof. T. Jefferson (University Sheffield, UK), Prof. R. Breitenbücher, RUB) 20.03.2023

28. J. Reinold, Computational modeling of extrusion-based 3D-concrete-printing processes (Additional referees: Prof. R. Wüchner (TU Braunschweig), Prof. V. Mechtcherine (TU Dresden)) 12.04.2023

29. S. Butt, Computational Fracture and Fragmentation Modeling using Peridynamics: Application to Mechanized Excavation in Hard Rock (Additional referees: Prof. J. Rostami (Colorado School of Mines, USA), Prof. J. Renner (RUB)) 28.07.2023

30. G. Neu, Computational Approaches to a Robust Segmental Lining Design in Mechanized Tunneling, (Additional referees: Prof. J. Barros (University Minho, Portugal), Prof. P. Mark (RUB)) 11.10.2023

31. Jérome Sercombe: Modélisation du comportement du béton en dynamic rapide, (Primary referee: Prof. A. Millard), École National de Ponts et Chaussées, Paris, France, 18.12.1997

32. Harm Askes: Advanced spatial discretization strategies for localized failure, (Primary referee: Prof. R. de Borst), TU-Delft, The Netherlands, 15.5.2000

33. Dimitrij Thikomirov: Theorie und Finite-Elemente Methode für die Schädigungsbeschreibung in Beton und Stahlbeton, (Primary referee: Prof. E. Stein), University Hannover, Germany, 22.06.2000

34. Rainer Pölling: Eine praxisnahe, schädigungsorientierte Materialbeschreibung von Stahlbeton für Strukturanalysen, (Primary referee: Prof. W.B. Krätzig), Ruhr University Bochum, Germany,, 20.12.2000

35. Gerhard Öttl: A three-phase FE-model for dewatering of soils by means of compressed air, (Primary referee: Prof. G. Hofstetter), University Innsbruck, Austria, 23.05.2003

36. Markus Peters: Modellierung von Rissausbreitung unter Verwendung der p-Version der X-FEM mit einer adaptiven Integrationsmethode, (Primary referee: Prof. K. Hackl), Ruhr-Universität Bochum, 05.06.2007

37. Peter Moonen: Continuous-discontinuous modelling of hygrothermal damage processes in porous media, (Primary referee: Prof. J. Carmeliet (ETH Zürich, Switzerland), Prof. B. Sluys), TU Delft, The Netherlands, 10.06.2009

38. Plinio Glauber Carvalho dos Prazeres: Nonlinear Analysis of NATM Tunnel Construction with the Boundary Element Method, (Primary referee: Prof. G. Beer), TU-Graz, Austria, 23.12.2009

39. Steffen Freitag: Modellfreie numerische Prognosemethoden zur Tragwerksanalyse, (Primary referee: Prof. W. Graf, additional referee: Prof. M. Kaliske (TU Dresden, Germany)), TU-Dresden, Germany, 22.06.2010

40. Thomas de Larrard: Variability of the properties of concrete: Experimental characterization and probabilistic modeling of leaching, (Additional referees: Prof. N. Burlion (University Lille 1, France), F. Schoefs (University de Nantes, France), Prof. A. Sellier (University de Toulouse 3, France), Prof. J.-M. Torrenti (University de Paris-Est, France), Dr. F. Benboudjema (ENS Cachan, France)), ENS Cachen, Paris, France, 28.09.2010

41. C. Hackspiel: A Numerical Simulation Tool for Wood Grading, (Primary referee: Prof. J. Eberhardsteiner), TU Vienna, Austria, 12.10.2010

42. O. Arnau Delgardo: Structural Response of Precast Concrete Segmental Tunnel Linings, (Primary referee: Prof. C. Molins i Borrell (UPC Barcelona, Spain), Additional referees Prof. A. Cladera Bohigas (Universiat de les Baleares, Spain), Pro.f. G. Plizzari (University Brezzia, Italy), UPC Barcelona, Spain, 16.03.2012

43. Diego F. Mora: Multifield-based Modeling of Material Failure in High Performance Reinforced Cementitious Composites, (Primary referee: Prof. X. Oliver, Additional referees Prof. S. Oller (UPC Barcelona, Spain), Prof. J. Barros (Universität Mino, Portugal), UPC Barcelona, 26.04.2013

44. Izral Faizal: Propagating cracks in porous media: modeling and computational aspects, (Primary referees: Prof. R. de Borst (University Glasgow), Prof. J. Remmers (TU Eindhoven), Additional referees: Prof. D. Smeulders (TU Eindhoven), Prof. J. Huyghe, (TU Eindhoven)), TU Eindhoven, The Netherlands, 07.11.2013

45. Ngoc Anh Do: Numerical Analysis of Segmental Tunnel Linings under static and dynamic loads, (Primary referee: Prof. D. Dias (University Grenoble, France), Additional referees: Prof. T. Celestino (University Sao Paolo, Brazil), Prof. R. Kastner (INSA Lyon, France), Prof. P. Oreste (Technical University Torino, Italy)), INSA Lyon, 07.07.2014

46. Rita Esposito: The Deteriorating Impact of Alkali-Silica Reaction on Concrete, (Primary referee: Prof. M. Hendriks), TU Delft, The Netherlands, 06.01.2015

47. Soyoun Son: Lattice Boltzmann modeling of two-phase flow in macroporous media, (Primary referee: Prof. J. Carmeliet), ETH Zürich, Switzerland, 23.06.2016

48. Miroslav Marjanovic: Nonlinear Analysis of Laminated Composite Plates and Shells with Delaminations using Finite Element Method, (Primary referee: Prof. D. Vuksanovic), University Belgrade, Serbia, 25.08.2016

49. Marco Götz: Numerische Entwurfsmethoden unter Berücksichtigung polymorpher Unschärfe, (Primary referees: Prof. W. Graf, Prof. M. Kaliske), Dresden University of Technology, 12. April 2017.

50. Thomas Kiefer: A multiscale concept based on computational mechanical methods to link thermal as well as mechanical properties from the microstructure of fired clay to the structural scale of masonry. (Primary referees: Prof. C. Hellmich, Prof. J. Füssl, additional external referee: Prof. A. Giraud), Vienna University of Technology, 29. May, 2019.

51. Eva Binder: Mehrskalenanalyse des zeitabhängigen Verhaltens zementgebundener Werkstoffe: hochdynamischer Festigkeitszuwachs und temperaturaktiviertes Kriechen, (Primary referees: Prof. Bernhard L. A. Pichler, Prof. Herbert A. Mang, Prof. Yong Yuan, additional external referee: Prof. Agathe Robisson), Vienna University of Technology, 25. June, 2021.

52. Abdel Hassan Sweidan: Thermo-Hydro-Mechanical Modeling of Pore-fluid Phase Change in Porous Media (Primary referee: Prof. B. Markert), RWTH Aachen, 18. August 2022

53. Emilija Jočić: Progressive failure analysis of laminar composites under three-dimensional stress state using layered finite elements (Primary referee: Prof. M. Marjanovic), University of Belgrad, 05. October 2023.

Participation in Habilitation Committees (Venia Docendi):

- Dr. D. Kuhl: Modellierung und Simulation von Mehrfeldproblemen der Strukturmechanik (Chairman, Additional referees: Prof. O.T. Bruhns, Prof. W. Krätzig, Ruhr University Bochum, Germany), 08.07.2004

- Dr. Y. Petryna: Schädigung, Versagen und Zuverlässigkeit von Tragwerken des konstruktiven Ingenieurbaus (Additional referees: Prof. F. Stangenberg, Prof. W. Krätzig, Ruhr University Bochum, Germany), 06.02.2004

- Dr. B. Pichler, Strength of micro-heterogeneous materials exhibiting brittle failure (Additional referees: Prof. J. Eberhardsteiner, Prof. H.A. Mang, TU Vienna, Austria), 20.04.2009

- Dr. Thomas-Peter Fries. The Extended Finite Element Method (Additional referees: Prof. Marek Behr, RWTH Aachen, Prof. Wolfgang Wall, TU Munich, Germany), 31.01.2012

- Dr. Peter Gamnitzer. Multifield Modelling in Computational Mechanics (Additional referees: Prof. G. Hofstetter, University Innsbruck, Prof. Wolfgang Wall, TU Munich, Germany), 26.11.2020