

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



## Curriculum Vitae

### Education:

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| 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, area of specialization: structural engineering |
| 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.  |
| Dec. 1990 - Jan. 1992 | Research associate, Stanford University (Applied Mechanics Division, Prof. J.C. Simo), California, USA                    |
| 30. Oct. 1996         | <i>Venia Legendi</i> , field: Strength of Materials and Structural Mechanics  |

### Professional Career:

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| 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                       |
| Oct. 1996 - Aug. 1998       | Associate Professor, Institute for Strength of Materials, Vienna University of Technology                        |
| since 1. Sept. 1998         | Full Professor, Institute for Structural Mechanics, Ruhr University Bochum, Germany                              |
| October 2001 - October 2004 | Director of Institute for Structural Engineering, Ruhr University Bochum, Germany                                |

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| October 2003 - September 2004 | Vice Dean of the Faculty for Civil Engineering, Ruhr University Bochum, Germany                                       |
| October 2004 - September 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                              |
| Since July 2010               | Spokesman of the Research Department „Subsurface Modeling and Engineering“  |
| Since January 2016            | Member of the Austrian Science Board  |
| 2016 - 2020                   | Member of the Review Board for the Section „Applied Mechanics, Statics and Dynamics“ of the German Science Foundation |
| since 2017                    | Member of the Programme Accreditation Commission of ASIIN   |
| since 2021                    | Adjunct Professor at Shandong University  |

## Honors and Awards

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| December 1989        | Award of a Max Kade stipend by the Austrian Academy of Sciences         |
| October 1996         | Advancement Award for the Sciences of the City of Vienna                |
| December 1997        | Kardinal-Innitzer-Award   |
| Since May 2010       | Member of the Academy of Sciences and the Arts of Northrhine-Westphalia |
| Since October 2010   | Member of the German Academy of Science and Engineering (acatech)       |
| Since May 2012       | Corresponding Member of the Austrian Academy of Sciences                |
| September 2014       | EUREKA-Innovation-Award 2014 in Category “Innovator of Tomorrow”        |
| Since September 2017 | Member of the Academia Europaea   |

## Academic Activities

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|-------------|---|
| 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, Germany                                 |
| since 2017  | Member of the Programme Accreditation Commission of ASIIN   |
| since 2017  | Member of the Senate of Ruhr University Bochum, Deputy Spokesman of Professor’s Curia             |

## Scientific Activities

- Author of 1 Book
- Co-editor of 2 Books and 11 conference proceedings
- Co-author of 9 Book-Chapters
- Co-Organizer of 11 international conferences and 42 Minisymposia
- 440 scientific papers (thereof 180 papers in international peer-reviewed scientific journals)
- 160 oral scientific presentations at congresses, conferences and symposia

## Editorships and Membership in Editorial Boards of Scientific Journals

- Editor-in-Chief of "Engineering Structures" (Elsevier) (since August 2020)
- Editor-in-Chief of "European Journal of Environmental and Civil Engineering" (Taylor and Francis) (since April 2020)
- Associate Editor of "Modeling" (MDPI) (since July 2020)
- Computers and Concrete (Editorial Board since March 2003)
- Engineering Structures (Editorial Board since 2005)
- International Journal for Numerical and Analytical Methods in Geomechanics (Editorial Board since 2013)
- Computers and Geotechnics (Editorial Board since January 2015)
- Underground Space (Editorial Board since January 2016)

## 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 October 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)
- Scientific Board of the International Association for Computational Methods in Geomechanics (since 2005)

- 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)
- International Association for Bridge Maintenance and Safety (IABMAS) (since 2000)
- International Association for Bridge and Structural Engineering (IABSE) (since 2000)

## Teaching

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, Computational Mechanics of Inelastic Materials (Master program Civil Engineering and International Master Program Computational Engineering), 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, wood, biological 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 construction processes, machine learning methods and uncertainty modeling in engineering. Computational modeling of hard and soft biological materials and cell growth processes.

## 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

- 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)
- 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)

- 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)
- 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)
- 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)
- 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)
- Minisymposium „Computational Modelling in Tunneling“ in the framework of 7. Konferenz „Computational Plasticity - Fundamentals and Applications“ (COMPLAS), Barcelona, Spanien, 7.-10. April 2003
- Minisymposium „Computational Geomechanics and Environmental Mechanics with Coupled Problems“, in the framework of 6. World Congress on Computational Mechanics, Peking, China, 5.-10. September 2004, with Prof. X. Li (Dalian, China) and Prof. B. Schrefler (University Padova, Italy)
- EUROMECH-Kolloquium „Numerical Analysis of Concrete Cracking“, Innsbruck, Austria, 21.-23. February 2005, with Prof. G. Hofstetter (University Innsbruck, Austria)
- 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)
- 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)
- 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)
- 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)
- 7 Sessions zum Thema „Coupled problems“ in the framework of ICIAM/GAMM 2007 Konferenz, ETH Zürich, Switzerland, 16.-20. July 2007, October Prof. M. Kamlah (Forschungszentrum Karlsruhe, Germany)

- 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)
- 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)
- 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)
- Workshop „Technology Innovation in Underground Construction“, in the framework of World Tunneling Congress, Budapest, Ungarn, 26. May 2009
- International Workshop „Advanced in Numerical Simulation and Knowledge-Based Methods in Tunneling“, Ruhr University Bochum, 08. September 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)
- 2nd International Conference on Computational Methods in Tunnelling (EURO:TUN 2009), Bochum, Germany, 09.-11. September 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)
- International Conference on Computational Modeling of Concrete Structures (EURO-C 2010), Rohrmoos/Schladming, Austria, 15.-18. March 2010, with Prof. R. de Borst (TU Eindhoven, The Netherlands), Prof. N. Bicanic (University Glasgow, UK), Prof. H.A. Mang (TU Vienna, Austria)
- 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)
- 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)
- 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)

- 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)
- 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)
- Conference on Computational Modelling of Concrete and Concrete Structures (EURO-C 2014), St. Anton am Arlberg, Austria, 24.-27. March 2014, with Prof. N. Bićanić (University Glasgow, UK) and Prof. H.A. Mang (TU Vienna, Austria)
- Workshop „Computational Modeling of Alkali Silica Reaction“, 09. April 2014, Ruhr University Bochum, Germany.
- 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)
- Minisymposium „Computational Modelling in Underground Construction“, 14th IAC-MAG Conference, 22.-25. September 2014, Kyoto, Japan, with K. Soga (Cambridge University, UK), Y. Yuan (Tongji University, China)
- 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. September 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)
- 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)
- 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)
- Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2014, 05.-08. August 2014, McMaster University, Canada, with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University

of Technology, Austria), Prof. G. Pijaudier-Cabot (Université de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)

- 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)
- 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 (Université de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)
- Special session „Surrogate Modelling in Structural Mechanics“, 4th Int. Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering (CSC 2015), 01.-04. September 2015, Prague, with Dr. S. Freitag (Ruhr University Bochum), Prof. M. Graf (TU-Dresden) and Prof. R.L. Muhana (Georgia Institute of Technology, USA)
- Special session „Numerical Modeling of Concrete Structures“, XIII International Conference on Computational Plasticity - Fundamentals and Applications (COMPLAS XIII), 01.-03. September 2015, Barcelona, Spain, with Prof. P. Marovic (University of Split, Croatia) and Prof. M. Galic (University of Split, Croatia)
- Minisymposium „Cementitious materials: experiment and modeling across the scales“, ASCE-EMI 2016, 22.-25. July 2016, Vanderbilt University, USA, <http://www.vanderbilt.edu/emipm> with Prof. C. Hellmich (Vienna University of Technology, Austria), Prof. B. Pichler (Vienna University of Technology, Austria), Prof. G. Pijaudier-Cabot (Université de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)
- Minisymposium „Computational modeling of hydraulic fracturing“, ECCOMAS Congress 2016, 05.-10. June 2016, Crete, <http://www.eccomas2016.org>, with Prof. G. Pijaudier-Cabot (Université de Pau et des Pays de l'Adour, France) and Prof. G. Cusatis (Northwestern University, USA)
- 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 (Université de Pau et des Pays de l'Adour, France) and Prof. F. Ulm (MIT, USA)
- 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)
- 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, Österreich)

- Minisymposium „Computational Geomechanics“, 14th US National Conference on Computational Mechanics (USNCCM14), 17.-20. Juli 2017, Montreal, Canada, <http://14.usnccm.org>, jointly with Prof. R. Borja (Stanford University, USA), W. Sun (Columbia University, USA) und P. Newell (Sandia National Laboratories, USA).
- Conference on Computational Modelling of Concrete and Concrete Structures (EURO-C 2018), Bad Hofgastein, Austria, 26. February - 1. March 2018, with Prof. B. Pichler (TU Vienna, Austria) and Prof. J. Rots (TU-Delft).
- 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 (Université de Pau et des Pays de l'Adour, Frankreich) and Prof. F. Ulm (MIT, USA)
- 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 (Université de Pau et des Pays de l'Adour, Frankreich) und Dr. J.J. Timothy (Ruhr-University Bochum)
- 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)
- 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)
- Special Session „Underground Construction“, China-Europe Conference on Geotechnical Engineering, 13.08.2018, Wien, Österreich, with Prof. H. Zhu (Tongji Universität, China)
- 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)
- 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)
- 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)

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

## Supervision and Co-Supervision 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 quasi-spröden 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 Porenschädigung 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 (Université 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
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#### Participation in Habilitation Committees (Venia Docendi):

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- 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
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