

Wolfgang A. Wall (Prof. Dr.-Ing.)

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Personal: born in Salzburg (Austria), three children

Education, professional career (selection)

Education

- 1983 Matura, Höhere Technische Bundeslehranstalt Salzburg (A), (with distinction)
- 1991 Graduation (Dipl.-Ing.) from University of Innsbruck (A), (with distinction)
- 1999 Ph.D. (Dr.-Ing.), University of Stuttgart (advisor: E. Ramm), Thesis: Fluid structure interaction with stabilized finite elements, (with distinction 'summa cum laude')

Professional career, employment history

- 1983 - 1984 Engineer in engineering consulting office, Salzburg (A)
- 1990 Visiting researcher, Princeton University (USA)
- 1992 - 1994 University assistant, Institute of Mechanics, University of Innsbruck (A)
- 1994 - 1997 DFG doctoral scholar – GK "Modeling and discretization methods for continua and fluids", University of Stuttgart
- 1997 - 1999 Research assistant and team leader, Institute for Structural Mechanics, University of Stuttgart
- 1999 - 2003 Vice head of Institute for Structural Mechanics, University of Stuttgart
- 2003 – Full Professor (Ordinarius) for Computational Mechanics, Founding Director of Institute for Computational Mechanics, Technical University of Munich
- 2010 - 2012 Founding Director of *Munich School of Engineering*
- 2011 Co-Founder of company *AdCo Engineering^{GW} GmbH*
- 2012 Founding Director *Center for Computational Biomedical Engineering, CBME*
- 2019 Co-Founder of company *Ebenbuild GmbH*

Scientific community (selection)

Appointments, elected positions (selection)

- 2004 - 2020 Member of Executive Council of German Association for Computational Mechanics (GACM)
- 2004 – Member of General Council of International Association for Computational Mechanics (IACM)
- 2003 – Honorary Member of Technology Network Alliance (TechNet)
- 2006 – Member of Scientific Council of International Centre for Mechanical Sciences (CISM), Udine, Italy

2008 - 2018 Member of Selection Committee “Landesforschungspreis Baden-Württemberg” (most prestigious (highest endowment) state research award in Germany)

2008 – Member of Foundation Board of Timoshenko-Föppl-Foundation

2008 Member of Committee on Fluid-Structure Interaction of Applied Mechanics Division, American Society of Mechanical Engineers (ASME)

2008 - 2012 Vice-President of German Association for Computational Mechanics (GACM)

2010 – Member of ECCOMAS CFD Committee

2011 - 2012 Member of Advisory Council of TUM President for German Excellence Initiative

2011 - 2017 Member of the Advisory Council of TUM Institute for Advanced Studies

2011 - 2017 Member of the Munich School of Engineering Executive Board

2012 - 2020 Chairman of ECCOMAS (European Community on Computational Methods in Applied Sciences and Engineering) CFD Committee

2012 - 2018 Member of Executive Council of International Association for Computational Mechanics (IACM)

2012 - 2016 Member of Advisory Council of the Leibniz Supercomputing Centre

2012 - 2020 Member (co-opted) of ECCOMAS Executive Council

2013 - 2016 President of German Association for Computational Mechanics (GACM)

2014 - 2017 Member of Founding Board of the TUM School of Bioengineering

2014 - 2023 Member for Research & Technology Board of Graz University of Technology (TU Graz, Austria)

2015 – Corresponding Member Abroad of Austrian Academy of Sciences

2015 - 2017 Editor-in-Chief of International Journal for Numerical Methods in Fluids

2015 - 2020 Member (& later Deputy Panel Chair) of ERC Advanced Grant Panel

2016 – Member of TUM Appointment and Tenure Board

2017 – Rector of International Centre for Mechanical Sciences (CISM), Udine, Italy

2017 – Member of the Bavarian Academy of Sciences and Humanities

2019 – Member of the Technical Scientific Council of Helmholtz-Zentrum Geesthacht (HZG, Centre for Materials and Coastal Research)

2020 – Chairman of Technical Scientific Council of Helmholtz Centre Hereon GmbH

2021 – Member Munich Institute of Biomedical Engineering (MIBE), TUM

2021 – Member Munich Institute of Robotics & Machine Intelligence (MIRMI), TUM

2021 – Core Member Munich Data Science Institute (MDSI), TUM

2022 – Supervising lecturer of Austrian Study Foundation

2022 – Core Member Inst. on Materials, Energy & Process Engineering (MEP), TUM

2022 – Member of Advisory Board of Leibniz Supercomputing Centre (LRZ)

2023 – Member of Presidential Strategy Council of Bavarian Academy of Sciences and Humanities

Awards (selection)

1986, 1987, 1988 Excellency in Studying Awards (~ top 1%)

1991 Best graduation ever in Civil Engineering at Innsbruck University

1988-1991 Scholar of “Pro Scientia”

1994 European Academic Software Award

2000 Fritz-Peter-Müller Award, University of Karlsruhe

2000 Rotary Award for doctoral thesis, Stuttgart

2005 – Many (Golden) teaching Awards (from TUM students)

2008 Fellow Award of the International Association of Computational Mechanics

2011 Chuo University (Tokyo) Guest professorship Award for outstanding international scientists

2012 IACM Computational Mechanics Award

2013 Heinz Maier-Leibnitz Medal

2015 Elected as Corresponding Member abroad of Austrian Academy of Sciences

2016 Prandtl Medal (ECCOMAS)

2017 Elected as Member of the Bavarian Academy of Sciences and Humanities

2018 EUROMECH (Solid Mechanics) Fellows Award (European Mechanics Society)

2019 – Several high-rank awards for our start-up Ebenbuild in top Bavarian, federal, and European start-up competitions

2021 European Research Council (ERC) Advanced Grant

2022 JSSES Grand Prize (highest award from the Japan Society for Computational Engineering and Science)

2024 O.C. Zienkiewicz Award (IACM)

Regularly invited as plenary & keynote lecturer at major international conferences in Computational Mechanics, Computer Methods in Applied Science and Engineering, Biomechanics & Biomedical Engineering, etc.

Numerous high-level awards (like Richard-von-Mises award, ECCOMAS Best PhD award, Bavarian teaching award, etc.) by scientific co-workers

Editorial activities (selection)

Editorial Board member of *International Journal for Numerical Methods in Engineering*, IJNME

Editorial Board member of *Computer Methods in Applied Mechanics and Engineering*, CMAME

Editorial Board member of *International Journal for Numerical Methods in Fluids*, IJNMF

Editorial Board member of *International Journal for Numerical Methods in Biomedical Engineering*, IJNMBE

Editorial Board member of *Advanced Modelling and Simulation in Engineering Sciences*, AMSES

Editorial Board member of *Acta Mechanica*

Editorial Board member of *Mechanics of Advanced Materials and Structures*

Editorial Board member of *International Journal for Coupled Systems Mechanics*, CSM

Advisory Editorial Board member of *Computer Assisted Methods in Engineering and Science*

Editorial Board member of *European Journal of Computational Mechanics*

Editor of Springer Book Series *CISM International Centre for Mechanical Sciences – Courses and Lectures*

Reviewing activities

Next to reviewing for many leading international scientific journals, also regular reviewer for a variety of national and multi-national funding agencies, research centres, international universities, and governments

Publications

Hundreds of publications in peer-reviewed international journals (top journals in the fields)
 ORCID ID: 0000-0001-7419-3384, Scopus Author ID: 7006297692, Web of Science ResearcherID: I-3787-2012

- Scopus lists over 340 publications with an h-index of 59 (and an i10-index of 219)
- Web of Science lists over 330 publications with an h-index of 56 (i10: 200)
- Google scholar lists over 700 documents with an h-index of 77 (i10: 281)

Co-Author of textbook series on Engineering Mechanics (available in German and in English; the German version (now in its' 15th edition) is the best-selling (across all disciplines/publishers) technical textbook series in German language)

Research funding

PI in a multitude of research projects funded by different funding agencies (e.g. German Science Foundation (DFG), European Union, European Research Council (ERC), different Federal and State Ministries (Science, Economic Affairs), etc.) as well as in a variety of research projects directly funded by industry

And many further services in Scientific and Academic Communities

Research fields & Teaching activities

For an overview of current activities, please have a look at our web pages

- Home: <http://www.epc.ed.tum.de/lnm/home/>
- Research: <http://www.epc.ed.tum.de/lnm/research/> & <http://www.epc.ed.tum.de/lnm/publications/>
- Teaching: <http://www.epc.ed.tum.de/lnm/teaching/>

Brief research statement

Research interests of Wolfgang A. Wall and his group can be described as “application-motivated fundamental research” in a broad range of areas in computational mechanics, with applications spanning all fields of engineering and the applied sciences. With a strong basis in a variety of advanced single-field problems (like computational solid/structural, fluid, and transport dynamics), the current focus lies on coupled multifield and multiscale problems (like fluid-structure interaction, contact dynamics, thermo-structure interaction, electro-chemo-mechano-thermo interaction, opto-acoustics, porous media, multiphase transport, etc.). The current focus from the viewpoint of applications is on Energy storage systems (like all-solid-state batteries), production and process engineering (like additive manufacturing) as well as on computational biophysics (on sub-cellular and cellular scale) and especially biomedical engineering (like patient-specific modeling of the respiratory and cardiac system, cancer growth/transport oncophysics, nanomedicine, musculoskeletal system, etc. – all of which aim at a shift in health care towards *in silico* powered individualized medicine). In all these areas, his group covers the full spectrum, from advanced modeling and developing novel computational methods to sophisticated software development and application-oriented simulations on high-performance computing systems. A strong recent focus is on uncertainty quantification, inverse analysis and machine learning. In collaboration with leading researchers worldwide and national and international industrial partners, LNM expedites projects at the front line of research.