

Prof. Marek Behr, Ph.D.

Chair for Computational Analysis of Technical Systems
RWTH Aachen University, 52056 Aachen, Germany

Tel: +49 241 80 999 00

Fax: +49 241 80 999 10

E-mail: behr@cats.rwth-aachen.de

Web: <http://www.cats.rwth-aachen.de>



Biography

Education

- 1983–1986 undergraduate studies in Physics at the Warsaw University
- 1986–1988 B.Sc. in Aerospace Engrg and Mechanics, University of Minnesota, USA
- 1988–1992 Ph.D. in Aerospace Engrg and Mechanics, University of Minnesota, USA

Professional History

- 1992–1999 Research Associate, Research Asst Professor, University of Minnesota
- 1999–2003 Assistant Professor, Mechanical Engineering, Rice University
- 2003–2004 Deputy Head, Chair for Computational Mechanics, TU Munich
- since 2004 Professor and Head, Chair for Computational Analysis of Technical Systems, Faculty of Mechanical Engineering, RWTH Aachen University
- since 2005 Adjunct Professor, Chemical and Biomolecular Engineering, Rice University
- since 2018 Founding Director, Center for Simulation and Data Science, Jülich-Aachen Research Alliance
- since 2018 Speaker, International Research Training Group 2379 “Modern Inverse Problems” with University of Texas at Austin

Honors and Awards

- 2014 Fellow of the International Association for Computational Mechanics
- 2016 Plenary at 12th World Congress on Computational Mechanics, Seoul
- 2019 Chuo University (Tokyo) Guest Professorship
- 2021 Semi-plenary at 14th World Congress on Computational Mechanics, Paris

Service

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| President | German Association for Computational Mechanics (GACM) |
| Executive Council | International Association for Computational Mechanics (IACM) |
| General Assembly | European Community on Comp. Meth. in Appl. Sci. (ECCOMAS) |
| Advisory Board | International Journal for Numerical Methods in Fluids (Wiley) |
| Editorial Board | Computers and Mathematics with Applications (Elsevier) |
| Editorial Board | Lecture Notes in Applied Mathematics and Mechanics (Springer) |
| Steering Comm. | ERCOTAC SIG37 Biomedical Fluid Mechanics |
| Scientific Board | Sano Centre for Computational Medicine, Krakow, Poland |
| Selection Panel | REWIRE Reinforcing Women in Research, University of Vienna |

Doctoral Advising

Feby Abraham (Rice 2004), Dhruv Arora (Rice 2005), Mehdi Behbahani, Stefanie Elgeti, Marcus Hormes, Dimitrios Papadopoulos (2011), Mike Nicolai (2012), Gero Schieffer, Marcus Probst (2013), Bae-Hong Chen, Georg Wellmer (2014), Eva Schlauch (2015), Eric Borrmann, Lutz Pauli (2016), Norbert Hosters (2018), Manuel Brüderlin (2019), Linda Gesenhues, Lars Reimer (2020), Violeta Karyofylli (2021), Patrick Antony, Max von Danwitz, Blanca Ferrer, Stefan Haßler, Michel Make, Emre Öngüt, Anna Ranno, Max Schuster, Thomas Spenke, Loïc Wendling, Stefan Wittschieber (current)

Doctoral Co-Advising with Junior Researchers

Oscar Coronado (Rice 2008), Martin Krause (2010), Arianna Bosco, Kwok-Wah Chen, Tue Nguyen (2011), Safdar Abbas, Alaskar Alizada (2012), Henning Sauerland (2013), Malak Baydoun, Andreas Püttmann, Christian Windisch (2014), Sarah Frauholz (2015), Atanas Stavrev, Niko Weber (2016), Philipp Knechtges, Roland Siegbert (2018), Florian Zwicke (2020), Ajay Rangarajan (2021), Sebastian Eusterholz, Markus Frings, Felipe Gonzalez, Jan Helmig, Daniel Hilger, Fabian Key, Konstantin Key, Jayghosh Rao, Eugen Salzmann, Daniel Wolff (current)

Publications

Ten Most Important Recent Publications:

1. F. Guglietta, M. Behr, L. Biferale, G. Falucci, and M. Sbragaglia, “On the Effects of Membrane Viscosity on Transient Red Blood Cell Dynamics”, *Soft Matter* **16** (2020) 6191–6205.
2. S. Haßler, A. Ranno, and M. Behr, “Finite-Element Formulation for Advection-Reaction Equations with Change of Variable and Discontinuity Capturing”, *Computer Methods in Applied Mechanics and Engineering* **369** (2020) 113171.
3. T. Spenke, N. Hosters, and M. Behr, “A Multi-Vector Interface Quasi-Newton Method with Linear Complexity for Partitioned Fluid-Structure Interaction”, *Computer Methods in Applied Mechanics and Engineering* **361** (2020) 112810.
4. S. Haßler, L. Pauli, and M. Behr, “The Variational Multiscale Formulation for the Fully-Implicit Log-Morphology Equation as a Tensor-Based Blood Damage Model”, *International Journal for Numerical Methods in Biomedical Engineering* **35** (2019) e3262.
5. M. von Danwitz, V. Karyofylli, N. Hosters, and M. Behr, “Simplex Space-Time Meshes in Compressible Flow Simulations”, *International Journal for Numerical Methods in Fluids* **91** (2019) 29–48.
6. V. Karyofylli, L. Wendling, M. Make, N. Hosters, and M. Behr, “Simplex Space-Time Meshes in Thermally Coupled Two-Phase Flow Simulations of Mold Filling”, *Computers & Fluids* **192** (2019) 104261.
7. M. Schäfer, M. Behr, M. Mehl, and B. Wohlmuth, editors, “Recent Advances in Computational Engineering”, *Proceedings of the 4th International Conference on Computational Engineering ICCE 2017*, Springer, (2018).
8. N. Hosters, J. Helmig, A. Stavrev, M. Behr, and S. Elgeti, “Fluid-Structure Interaction with NURBS-Based Coupling”, *Computer Methods in Applied Mechanics and Engineering* **332** (2018) 520–539.
9. B. Keith, P. Knechtges, N.V. Roberts, S. Elgeti, M. Behr, and L. Demkowicz, “An Ultraweak DPG Method for Viscoelastic Fluids”, *Journal of Non-Newtonian Fluid Mechanics* **247** (2017) 107–122.
10. F. Zwicke, P. Knechtges, M. Behr and S. Elgeti, “Automatic Implementation of Material Laws: Jacobian Calculation in a Finite Element Code with TAPENADE”, *Computers and Mathematics with Applications*, **72** (2016) 2808–2822.

See also Google Scholar: <https://scholar.google.com/citations?user=zL17ZtMAAAAJ>