Prof. Dr. Axel Voigt

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Curriculum Vitae:

16.8.1971	born in Halle/Saale, Germany
1991 – 1997	Study of physics and mathematics at the University of Marburg, Colorado State University, Fort Collins and Technische Universität München, Diplom in Mathematics in 1997, Vordiplom in Mathematics and Physics in 1994
2001	PhD (magna cum laude) in mathematics on Numerical solution of industrial crystal growth at the Technische Universität München (advisor: Prof. Dr. Karl-Heinz Hoffmann)
2001 – 2004	Postdoc at the research center caesar, Bonn with Prof. Dr. Karl-Heinz Hoffmann
2004	Habilitation at the Technische Universität München
2004 – 2007	Research group leader at research center caesar, Bonn
2004 – 2005	Lecturer at Technische Universität München
2005 – 2007	Lecturer at University of Bonn
since 2007	Full professor (W3) for scientific computing and applied mathematics at the Technische Universität Dresden
since 2007	Director of the Institute of Scientific Computing
2007	Visiting professor at the Aalto University, Espoo, Finland
2008	Visiting professor at the University of California, Irvine, US
2012	Research Fellow at IPAM, UCLA, US
since 2014	Editor of Advances in Computational Mathematics
2015	Research Fellow at Isaak Newton Institute, Cambridge, UK
since 2016	Dean of the Department of Mathematics

Awards and Functions:

since 2008	Speaker of the advisory board of the Center for Information Services and High Performance Computing (ZIH)

since 2012	Investigator of excellence cluster Center for Advancing Electronics Dresden (cfaed)
since 2013	Member of Dresden International Graduate School for Biomedicine and Bioengineering (DIGS-BB)
since 2014	Affiliated member of the Center for Systems Biology Dresden (CSBD)
2017	Art and Science Award of the City of Dresden

Areas of Research:

Scientific computing, Numerics for partial differential equations, Phase field and phase field crystal methods, Adaptive finite elements, High performance computing, Partial differential equations on surfaces, Computational biology, Computational materials science, Computational fluid dynamics

Selected Publications:

X. Li, J. Lowengrub, A. Rätz, A. Voigt. *Solving PDE's in complex geometries: A diffuse domain approach*. Communications in Mathematical Science **7** 81 (2009)

S. Aland, J. Lowengrub, A. Voigt. Two-phase flow in complex geometries: A diffuse domain approach. CMES **57** 77 (2010)

S. Aland, A. Voigt. Benchmark computations of diffuse interface models for two-dimensional bubble dynamics. Journal for Numerical Methods in Fluids **69** 747 (2012)

R. Hensel, R. Helbig, S. Aland, H.-G. Braun, A. Voigt, C. Neinhuis, C. Werner. *Wetting resistance at its topographical limit: The benefit of mushroom and serif T structures*, Langmuir **29** 1100 (2013)

T. Witkowski, S. Ling, S. Praetorius, A. Voigt. *Software concepts and numerical algorithms for a scalable adaptive parallel finite element method,* Advances in Computational Mathematics **41** 1145 (2015)

C. Köhler, R. Backofen, A. Voigt. *Stress induced branching of growing crystals on curved surfaces*. Physical Review Letters **116** 135502 (2016)

S. Reuther, A. Voigt. Incompressible two-phase flows with an inextensible Newtonian fluid interface. Journal of Computational Physics **322** 850 (2016)

M. Naffouti, R. Backofen, M. Salvalaglio, T. Bottein, M. Lodari, A. Voigt, T. David, A. Benk- ouider, I. Fraj, L. Favre, A. Ronda, I. Berbezier, D. Grosso, M. Abbarchi, M. Bollanii. *Complex dewetting scenarios of ultra-thin silicon films for large-scale nano-architectures*. Science Advances **13** eaao1472 (2017)

S. Reuther, A. Voigt. *Solving the incompressible surface Navier-Stokes equation by surface finite elements*. Physics of Fluids **30** 012107 (2018)

I. Nitschke, M. Nestler, S. Praetorius, H. Löwen, A. Voigt. *Nematic liquid crystals on curved surfaces - a thin film limit*. Proceedings of the Royal Society London A **474** 2214 (2018)