Prof. Dr. Arnold Reusken

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Personal data
Born 27. 11. 1960 in Apeldoorn, The Netherlands

Education
1979 - 1984: study Mathematics at the University of Utrecht
1984: Masters in Mathematics
1988: Ph.D. in Mathematics, thesis entitled "Convergence Analysis of Nonlinear Multigrid Methods"

Professional history
1988 - 1989: Postdoc at the Department of Mathematics, University of Utrecht
1989 - 1997: Assistant Professor, Technical University Eindhoven
1997 - present: Professor, Chair for Numerical Mathematics, RWTH Aachen University

Research interests

- Numerical methods for partial differential equations
- Finite element methods
- Fast iterative solvers, multigrid solvers
- Numerical methods for incompressible Stokes- and Navier-Stokes equations
- Numerical methods for two-phase incompressible flow problems
- Numerical methods for surface PDEs

Scientific activities and projects

- 95 peer-reviewed publications in international journals, 3 books, cf. www.igpm.rwth-aachen.de/personen/reusken/publications
- Coordinator (joint with Prof. Dr. D. Bothe) of DFG Priority Programme "Transport Processes at Fluidic Interfaces" (2010-2016)
- Editorial work: Member of Advisory Board of Computing (1997 - 2009), editor of SIAM Journal on Scientific Computing (2002 - 2008), editor of Computing and Visualization in Science (2009 - present), editor of Journal of Numerical Mathematics (2015 - present), editor of SIAM Journal on Numerical Analysis (2016 - present)

Most important publications

- M.A. Olshanskii, A. Quaini, A. Reusken, V. Yushutin,
  A finite element method for the surface Stokes problem,
  SIAM J. Sci. Comput. 40 (4), A2492-A2518 (2018)

- C.J. Falconi, C. Lehrenfeld, H. Marschall, C. Meyer, R. Abiev, D. Bothe, A. Reusken, M. Schlüter, M. Wörner,
  Numerical and experimental analysis of local flow phenomena in laminar Taylor flow in a square mini-channel,
  Physics of Fluids 28, 012109 (2016)

- M.A. Olshanskii, A. Reusken, X. Xu,
  An Eulerian space-time finite element method for diffusion problems on evolving surfaces,
  SIAM J. Numer. Anal. 52 (3), 1354-1377 (2014)

- C. Lehrenfeld. A. Reusken,
  Analysis of a Nitsche-XFEM-DG discretization for a class of two-phase mass transport problems,
  SIAM J. Numer. Anal. 51, No. 2, 958-983 (2013)

- M.A. Olshanskii, A. Reusken, J. Grande:
  An Eulerian finite element method for elliptic equations on surfaces,
  SIAM J. Numer. Anal. 47, 3339-3358 (2009).

- M. Karalashvili, S. Gross, A. Mhamdi, A. Reusken, W. Marquardt:
  Incremental identification of transport phenomena in convection-diffusion systems,
  SIAM J. Sci. Comput. 30, 3249-3269 (2008).

- S. Gross, A. Reusken:
  An extended pressure finite element space for two-phase incompressible flows with surface tension,
  J. Comp. Phys. 224 (1), 40-58 (2007).

- A. Reusken:
  On maximum norm convergence of multigrid methods for elliptic boundary value problems,
  SIAM J. Numer. Anal. 31, 378-392 (1994).

- W. Hackbusch and A. Reusken:
  Analysis of a damped nonlinear multilevel method,
  Numer. Math. 55, 225-246 (1989).

- S. Gross, A. Reusken,
  Numerical Methods for Two-phase Incompressible Flows,
  Springer Series in Computational Mathematics, Vol. 40, 2011.