

Prof. Dr.-Ing. Sabine Roller

Applied Supercomputing in Engineering

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Education:

- 12/2004 Dr.-Ing. Aerospace Engineering, Universität Stuttgart,
Dissertation: Ein numerisches Verfahren zur Simulation
schwach kompressibler Strömungen
- 1988-1994 Diploma Technical Mathematics, Universität Karlsruhe (TH)

Appointments:

- Since 08/2009 Full professor „Applied Supercomputing in Engineering,
Faculty of Mechanical Engineering, RWTH Aachen University
and German Research School for Simulation Sciences, Aachen
- 2007-2009 Head of „Scalable Computing & Coupled Systems“ (SCCS),
High Performance Computing Center Stuttgart (HLRS)
- 2003-2007 Postdoctoral Research Associate,
High Performance Computing Center Stuttgart (HLRS)
- 1997-2003 Research Associate,
Institut for Aero and Gasdynamics, Universität Stuttgart
- 1994-1997 Doktorandin (Fellow), Institut for Neutron Physics and
Reactor Techniques, Research Center Karlsruhe, Technik- und
Umwelt
- 1992-1994 Student trainee at Robert Bosch GmbH, Karlsruhe

Awards:

- 2003 Outstanding teaching prize of Baden-Wuerttemberg state
(with Dipl.-Ing. Michael Dumbser and Prof. C.-D. Munz)
- 1999 Amelia Earhart Fellowship Award, Zonta International
Excellent research in aerospace-related science and
engineering

Research Interest:

- Computational Fluid Dynamics
 - Low Mach Number Flows
 - Computational Aeroacoustics

- Particle In Cell (PIC)
 - Particle-Particle Interactions

- Coupled applications
 - Multiscale Problems
 - Multi-physics applications
 - Coupling techniques

- Parallelisation and Vectorization Techniques
 - Heterogeneous Domain Decomposition
 - Preconditioning Techniques
 - Hybrid Parallelisation
 - PGAS Languages

Memberships:

AIAA	American Institute of Aeronautics and Astronautics
GAMM	Gesellschaft für Angewandte Mathematik und Mechanik e.V.
DMV	Deutsche Mathematiker-Vereinigung