

## Prof. Dr. Volker Mehrmann

Date of birth	April 24, 1955
Place of birth	Detmold
Nationality	German
Gender	male
Current position	Professor (C4)
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### *Fields of interest*

Differential-algebraic equations; Model reduction; Numerical linear algebra; Nonlinear eigenvalue problems; Adaptive finite element methods; Optimal control; Perturbation theory; Error analysis; Stability analysis

### *Scientific vita and academic training*

10/2000–	Full Professor (C4), TU Berlin
03/1993–09/2000	Full Professor (C4), TU Chemnitz
10/1990–09/1992	Deputy Professor (Vertretungsprofessor) (C4), RWTH Aachen
07/1988–06/1989	Visiting Researcher, IBM Heidelberg
02/1986–02/1993	Assistant Lecturer (Hochschulassistent) (C1), U Bielefeld
07/1985–01/1986	Research Assistant, U Bielefeld
09/1984–06/1985	Visiting Research Professor, U of Wisconsin, Madison
02/1982–08/1984	Research Assistant, U Bielefeld
10/1980–01/1982	Graduate Assistant, U Bielefeld
09/1979–06/1980	Teaching Assistant, Kent State U., Ohio

### *Degrees*

1988	Habilitation in Mathematics, U Bielefeld
1982	PhD in Mathematics, U Bielefeld, with L. Elsner
1981	Staatsexamen, LA Gymn., Math./Physics, U Bielefeld, with L. Elsner
1979	Mathematics/Physics, Diploma, U Bielefeld, with L. Elsner

### *Awards (selection)*

2022	Fellow of the American Mathematical Society
2019	President European Mathematical Society
2019	Hans Schneider Prize of the International linear Algebra Society
2019	Member of European Academy of Science
2018	SIAM W.T. and Idalia Reid Prize in Mathematics
2017	Member of Academia Europaea
2011	Persident Gesellschaft Angewandte Mathematik und Mechanik
2011	SIAM Fellow
2009	Member of acatech, German Academy of Engineering
1999	Offer of a C4 Professorship, U Jena (rejected)

### *Invited lectures (selection)*

2019	DMV Jahrestagung, Karlsruhe
2019	Conference on Transfer between Mathematics and Industry CTMI, Santiago de Compostella
2018	GAMM Jahrestagung, München
2018	SIAM Annual Meeting, Portland Oregon
2015	SIAM Conference on Applied Linear Algebra, Atlanta
2015	International Congress on Industrial and Applied Mathematics, Beijing
2015	Gauß Lecture of <i>Deutsche Mathematiker Vereinigung</i> , Stuttgart
2014	Dutch Mathematical Congress, TU Delft
2013	22nd International Conference on Domain Decomposition Methods, USI Lugano
2013	29. Coloquio Brasileiro de Matematica, IMPA, Rio de Janeiro

#### *Selected activities*

2015–	Associate Editor <i>SMAI Journal of Computational Mathematics</i>
2014–	Member of the Scientific Advisory Board, Fraunhofer ITWM Kaiserslautern
2013–	Member of the Scientific Advisory Board, RICAM Linz
2011–	Member of the Scientific Advisory Board, AMIES Grenoble
2011–	Associate Editor <i>Acta Mathematica Vietnamica</i>
2011–	Associate Editor <i>Vietnam Journal of Mathematics</i>
2009–	Member of the Scientific Advisory Board CERFACS, Toulouse
2008–2016	Member of Mathematics Panel PE1, European Research Council
2008–	Member of the Scientific Advisory Board, Excellence Cluster and Graduate School <i>Simulation Technology</i> , U Stuttgart
2006–2015	Member of the Scientific Advisory Board, Hamilton Institute, National University of Ireland, Maynooth, Ireland
2004–2008	Member of the DFG Review Board <i>Mathematics</i>
2000–2004	Chair of the DFG Fachgutachterausschuss <i>Mathematics Panel</i>
1999–	Editor-in-Chief <i>Linear Algebra and its Applications</i>
1998–	Associate Editor <i>Numerische Mathematik</i>

### **Ten most important publications**

#### **Training of early career researchers within the last five years**

##### *Dissertations supervised*

- Mones Raslan, 2021  
*Solving Parametric PDEs with Neural Networks: Unfavorable Structure vs. Expressive Power*  
Degree: Dr. rer. nat.
- Christoph Zimmer, 2021  
*Temporal Discretization of Constrained Partial Differential Equations*  
Degree: Dr. rer. nat.
- Daniel Bankmann, 2020  
*Multilevel Optimization Problems with Linear Differential-Algebraic Equations*  
Degree: Dr. rer. nat.
- Benjamin Unger, 2020  
*Well-posedness and realization theory for delay differential-algebraic equations*  
Degree: Dr. rer. nat.
- Ute Kandler, 2019  
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Degree: n (e) xact methods for the solution of large scale Hermitian eigenvalue problems  
Dr. rer. nat.

■ Jeroen J. Stolwijk, 2018

*Error Analysis and Adaptive Control for gas flow in networks*

Degree: Dr. rer. nat.

■ Helia Niroomand Rad, 2017

*Coupled Systems of Maxwell Equations and Circuit Equations in Electro-Magnetism*

Degree: Dr. rer. nat.

*Habilitations supervised*

*Key projects with third party funding*

- 09/2017–05/2022 Marie Skłodowska-Curie Innovative Training Network (EID), *Reduced Order Modelling, Simulation and Optimization of Coupled systems*
- 09/2017–08/2023 DFG-SPP 1984, ME790/39-1, STR 14371-1 *Verteilte dynamische Netzsicherheitssteuerung in Elektroenergiesystemen der nächsten Generation* jointly with Kai Strunz
- 07/2016–06/2022 DFG-SPP-1897, KU 1446/21 *Suppressing brake vibrations by deliberately introduced damping*, jointly with von Wagner
- 06/2017–12/2018 ESB *Data Assimilation for Port-Hamiltonian Power Network Models*, jointly with Kruse and Voigt
- 06/2017–12/2018 ESB *Model Reduction for Nonlinear Parameter-Dependent Eigenvalue Problems in Photonic Crystals*, jointly with Altmann
- 06/2017–12/2018 ESB *Numerical solution of dynamic metabolic resource allocation problems for bioenergy production*, jointly with Bockmayr
- 10/2014–09/2017 ESB, *Algorithmische Lineare Algebra: Hochleistungsrechnen, Numerische Stabilität und Fehlertoleranz*, jointly with Holtz and Schwarz
- 06/2014–05/2017 ESB, *Reduced order modeling for data assimilation*, jointly with Schröder
- 06/2014–05/2017 ESB, *Adaptive Finite Element Methods for Nonlinear Parameter Dependent Eigenvalue Problems in Photonic Crystals*, jointly with Miedlar
- 06/2014–05/2017 ESB, *Stability analysis of power networks and power network models*, jointly with Mehl and Tischendorf
- 10/2014–06/2022 DFG SFB-TR 154, *Geregelte Kopplung von ganzzahlig-kontinuierlichen Modellen mit modellierten Unsicherheiten*
- 10/2016–09/2020 DFG SFB 1029, *Entwicklung reduzierter Modelle für die pulsierende Verbrennung*
- 10/2012–09/2016 DFG SFB 1029, *Entwicklung eines reduzierten Modells eines Pulsed Detonation Combusters*, jointly with Sesterhenn
- 04/2012–03/2016 DFG *Automatische Modellierung und Simulation von technischen Systemen mit Unsicherheit*, jointly with Jähnichen, Pepper, and Nytsch-Geusen
- 04/2012–03/2016 ERC Advanced Grant *Modeling, Simulation and Control of Multi-Physics Systems*
- 01/2010–12/2022 DFG SFB 910, *Analysis, numerical solution and control of delay differential-algebraic equations*