

Curriculum Vitæ for Ken Mattsson

Born Juli 29 1970 in Stockholm, Sweden. Married. Three children (born 2005, 2007 and 2019).

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Degrees

Professor in Scientific Computing, Uppsala University, 2018.

Docent (Associate Professor) in Numerical Analysis, Uppsala University, 2010.

Ph.D. in Numerical Analysis, Division of Scientific Computing, Uppsala University, 2003.

Title of thesis: Summation-by-Parts Operators for High Order Finite Difference Methods.

Supervisor: Professor Jan Nordström.

M.Sc. in Physics, specialization in Astronomy, Uppsala University, 1996.

Employments

Present employment:

Professor in Scientific Computing, Uppsala University (November 2018 -).

Previous employments

November 2014 - November 2018 Senior Lecturer in Scientific Computing, Uppsala University.

July 2010 - November 2014 Associate senior lecturer in Scientific Computing, Uppsala University.

August 2009 - November 2014 Researcher, underwater acoustics, Totalförsvarets forskningsinstitut (FOI).

July 2008 - July 2009 Researcher, safety analyst, Forsmarks kraftgrupp - Vattenfall.

June 2007 - August 2008 Researcher, FMB, Uppsala University.

September 2006 - June 2007 Researcher, Mechanical Engineering (CTR), Stanford University and NASA.

September 2004 - Sept. 2006 Post-doc, Mechanical Engineering (CTR), Stanford University and NASA.

January 2004 - August 2004 Post-doc, Department of Physics, University of Florida.

1997 - 2003 Ph.D. student, Division of Scientific Computing, Uppsala University.

Summary of Research Articles and Presentations

40 articles in international scientific journals (see <https://www.it.uu.se/katalog/ken/publications>). Most of these are in the fields of numerical analysis and scientific computing. 17 oral research presentations at international conferences, and many other invited presentations. 1 book chapter and 11 articles in reviewed conference proceedings. 22 technical reports. Poster presentation at the TUK conference 2018 and oral presentation 2019. Oral presentation at the conference for university pedagogical development, in Uppsala 2019. Invited presentations about physics and astronomy at *Dommarängens skola* (2014-2017), for children at age 8-10.

Experience as supervisor

Main supervisor PhD (dissertation year):

- Martin Almquist, Division of Scientific Computing, Uppsala University (February 2017).
- Jonatan Werpers, Division of Scientific Computing, Uppsala University (April 2021).
- Ylva Rydin, Division of Scientific Computing, Uppsala University (March 2022).
- Vidar Stiernström, Division of Scientific Computing, Uppsala University (2023).
- Gustav Eriksson, Division of Scientific Computing, Uppsala University (2024).

Co-supervisor PhD (dissertation year):

- Kenneth Duru, Division of Scientific Computing, Uppsala University (2012).
- Kristoffer Virta, Division of Scientific Computing, Uppsala University (2016).
- Dorotheé Vallot, Department of Earth Sciences, Uppsala University (2018).

Master thesis work

- I have supervised more than 10 different master thesis projects (30Hp) in scientific computing and numerical analysis at the department of information technology.
- I have supervised more than 10 degree projects (15 Hp) within the civil engineer programs, Uppsala University.

Commissions of trust

- Group leader for the teacher team in "scientific computing courses" at the division of scientific computing, Uppsala University (2020-)
- Responsible professor for PhD program in Scientific Computing with a specialization in Numerical Analysis, Uppsala University (2020-)
- Member of the program advisory board for the Bachelor's Programme in Physics, at Uppsala University 2019 -.
- Member of the program advisory board for *Computational science* at Uppsala University 2016 -.
- Member of the steering committee for "*Samverkan*" at the Department of Information Technology, Uppsala University (2014 -).
- Member of the steering committee of *EU-MATHS-IN* (2015 -).
- Member of the steering committee for the *Energy Arena* at the Department of Information Technology, Uppsala University (2012 - 2015).
- Member of the steering committee for the *Optimization Research Arena* at the Department of Information Technology, Uppsala University (2016 -).
- I participated in the planing for AIMday Math in Industry 2016, at Uppsala University.
- Member of the program committee for the *Thermal & Fluid Sciences Affiliates Conference* at Stanford University, 2004, 2005, 2006 and 2007.

Awards and grants (as PI)

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| 1998 | Award: Berndt Järmark's foundation for scientific research. |
| 2009-2016 | Lisa och Carl-Gustav Essens research foundation - Grant. |
| 2011 | Award: Innovationsstiftelsen Handelsbanken. |
| 2015-2016 | STINT - Grant for Integration and Internationalisation, together with Stanford University. |
| 2015-2017 | Ångpanneförenings research foundation-Grant, "Tillförlitliga och noggranna beräkningar av bullerspridning" (400 000 SEK). |
| 2012-2017 | CIM-Centre of Interdisciplinary Mathematics, PhD project (Martin Almquist). |
| 2016-2021 | CIM-Centre of Interdisciplinary Mathematics, PhD project (Ylva Rydin). |
| 2017-2018 | Stiftelsen Olle Engkvist Byggmästare - Grant, "Tillförlitliga prognoser av vulkanisk aktivitet från infraljuds simuleringar i atmosfären" (200 000 SEK). |
| 2017-2018 | "Preliminary studies"-Grant from SSF. For collaboration with SMHI (50 000 SEK). |
| 2019-2020 | TUFF project : "Kursövergripande problemlösning som integrerar analytiska och numeriska lösningsmetoder" (250 000 SEK) |
| 2018-2022 | Swedish Research Council (VR) "A high-fidelity model of acoustic-gravity waves from volcanic eruptions", (2 800 000 SEK). |
| 2019-2022 | Swedish Research Council For Sustainable Development (FORMAS) "Noise distribution in the environment", (2 996 970 SEK). |
| 2022-2026 | Swedish Research Council (VR) "A nonlinear model for acoustic-gravity waves", (3 600 000 SEK). |