

Curriculum Vitæ Bengt Ove Turesson

Higher Education Degree

BSc mathematics Linköping University 1988

Doctoral Degree

PhD in Mathematics, Linköping University 1996. Supervisor: Professor Lars Inge Hedberg, Linköping University. Thesis: *Nonlinear potential theory and weighted Sobolev spaces*.

Current Positions

- Senior Lecturer, Linköping University 1999–
- Deputy Programme Director for Mathematics, International Science Programme, Uppsala University 2019–

Previous Positions

- Acting Assistant Lecturer, Linköping University academic year 1994–1995
- Acting Senior Lecturer, Linköping University academic years 1995–1997
- Assistant Lecturer and Acting Senior Lecturer Linköping University academic years 1997–1999

Research Field

Partial differential equations (inverse problems, asymptotics of solutions, nonlinear potential theory), function spaces, especially Sobolev spaces

Peer-reviewed Publications

1. Berntsson, F., Kozlov, V.A., Mpinganzima, L., Turesson, B.O., *Robin-Dirichlet algorithms for the Cauchy problem for the Helmholtz equation*, Inverse Problems in Science and Engineering 26 (2018), no. 7, p. 1062–1078.
2. Berntsson, F., Kozlov, V.A., Mpinganzima, L., Turesson, B.O., *Iterative Tikhonov Regularization for the Cauchy Problem for the Helmholtz Equation*, Comput. Math. Appl. 73 (2017), no. 1, p. 163–172.
3. Kozlov, V., Radosavljevic, S., Turesson, B.O., Wennergren, U., *Estimating effective boundaries of population growth in a variable environment*, Bound. Value Probl. (2016), p. 1–28.
4. Berntsson, F., Kozlov, V.A., Mpinganzima, L., Turesson, B.O., *Corrigendum: An alternating iterative procedure for the Cauchy problem for the Helmholtz equation*, Inverse Probl. Sci. Eng. 22 (2014), no. 8, 1422.
5. Berntsson, F., Kozlov, V.A., Mpinganzima, L., Turesson, B.O., *An accelerated alternating procedure for the Cauchy problem for the Helmholtz equation*, Comput. Math. Appl. 68 (2014), no. 1–2, 44–60.
6. Berntsson, F., Kozlov, V.A., Mpinganzima, L., Turesson, B.O., *An alternating iterative procedure for the Cauchy problem for the Helmholtz equation*, Inverse Probl. Sci. Eng. 22 (2014), no. 1, 45–62.

7. Kozlov, V.A., Thim, J., Turesson, B.O., *Single Layer potentials on surfaces with small Lipschitz constants*, J. Math. Anal. Appl. 418 (2014), no. 2, 676–712.
8. Herberthson, M., Minani, F., Nzabanita, J., and Turesson, B.O., *Static Equilibrium Configurations of Charged Metallic Bodies*, Rwanda Journal, Volume 27, Series C, Mathematical Sciences, Engineering and Technology (2012), pp. 12–21.
9. Kozlov, V.A., Thim, J., Turesson, B.O., *A fixed-point theorem in locally convex spaces*, Collect. Math. 61 (2010), no. 2, 223–239.
10. Kozlov, V.A., Thim, J., Turesson, B.O., *Riesz potential equations in local L^p -spaces*, Complex Var. Elliptic Equ. 54 (2009), no. 2, 125–151.
11. Bastay, G., Kozlov, V.A., Turesson, B.O. *Iterative methods for an inverse heat conduction problem*, J. Inverse Ill-Posed Probl. 9 (2001), no. 4, 375–388.
12. Turesson, B.O., *Nonlinear potential theory and weighted Sobolev spaces*. Linköping Studies in Science and Technology. Dissertations, 387. Linköping University, Department of Mathematics, Linköping, 1995.

Books

1. Asratian, A., Björn, A., Turesson, B.O., *Diskret matematik*. Liber, 2020.
2. Turesson, B.O., *Nonlinear potential theory and weighted Sobolev spaces*. Lecture Notes in Mathematics, 1736. Springer-Verlag, Berlin, 2000.

Supervision of PhD Students

Involved in the supervision of 17 PhD students in the Department of Mathematics, Linköping University (initial main supervisor, assistant supervisor). Most important responsibilities:

1. Johan Thim, 2005–2009. PhD thesis: *Simple Layer Potentials on Lipschitz Surfaces: An Asymptotic Approach*.
2. Mike Krimpogiannis, 2009–2012. Licentiate thesis: *The Double Layer Potential Operator Through Functional Calculus*.
3. Lydie Mpinganzima, 2008–2014. PhD thesis: *Iterative Methods for Solving the Cauchy Problem for the Helmholtz Equation*.
4. Sonja Radosavljevic, 2011–2016. PhD thesis: *Permanence of age-structured populations in a spatio-temporal variable environment*.

Referee for Scientific Journals

- Abstract Analysis
- Applicable Analysis
- Bulletin of the Belgian Mathematical Society
- Journal of Functional Analysis
- Methods and Applications of Analysis

Organization of Conferences and Workshops

- *Conference in Honour of Lars Inge Hedberg*, Linköping University, June 10–15, 1996.
- *Workshop in Applied Mathematics*, Linköping University, August 30–31, 2004.

- *The p-Laplace Equation, the Infinity-Laplace Equation and Related Topics*, Linköping University, October 14–16, 2004.
- *Workshop in Applied Mathematics*, Linköping University, October 17–18, 2006.
- *Nonlinear Problems for Δ and Δ_p* , Linköping University, August 10–14, 2009.
- *Workshop Harmonic Analysis and Elliptic PDEs*, Linköping University, October 1, 2010.
- *The Third EAUMP Conference*, Makerere University, October 26–28, 2016.
- *The First East African Conference on Mathematical Statistics with Applications*, June 14–16, 2017.
- *First Network Meeting for Sida- and ISP-funded PhD Students and Postdocs in Mathematics*, Sida, Stockholm, March 7–8, 2017.
- *Second Network Meeting for Sida- and ISP-funded PhD Students and Postdocs in Mathematics*, Sida, Stockholm, February 26–27, 2018.
- *Third Network Meeting for Sida- and ISP-funded PhD Students and Postdocs in Mathematics*, Entebbe, Uganda, August 20–24, 2018.
- *Fourth Network Meeting for Sida- and ISP-funded PhD Students and Postdocs in Mathematics*, Bishoftu, Ethiopia, August 5–9, 2019.
- *The 5th Network Meeting for Research Groups in Mathematics in Sub-Saharan Africa*, Arusha, Tanzania, August 17–19, 2020.
- *The Fourth EAUMP Conference*, Arusha, Tanzania, August 20–22, 2020.

Outreach Activities

- Organiser of the final of the national Mathematics competition (*Skolornas matematiktävling*), November 22, 1997.
- Organiser of the International Mathematics Day (π -day), March 14, 2018, Kigali, Rwanda.
- Organiser of the International Mathematics Day (π -day), March 14, 2019, Kigali, Rwanda.

Pedagogical Experience

- Bachelor's and Master's level: Course leader and examiner for a large number of courses at Linköping University since the late eighties (Algebra, Analysis Honour's Course, Calculus, Discrete Mathematics, Fourier Analysis, Fourier and Wavelet Analysis, Functional Analysis, Linear Algebra)
- PhD level: Course leader and examiner for courses in Distribution Theory, Fourier Analysis, Functional Analysis, Partial Differential Equations, Theory of Integration
- Teaching at University of Rwanda: Fourier and Wavelet Analysis (two times)

Supervision/examination of BSc and MSc Theses

1. Tomas Johansson: *Analytic Solutions to Algebraic Equations*, MSc thesis 1998.
2. Håkan Stenström: *Lösning av algebraiska ekvationer med differentialresolventer*, MSc thesis 2005.
3. Nina Håkansson: *Population growth – Analysis of an age structure population model*, MSc thesis 2005.

4. Lydie Mpinganzima: *A Data Assimilation Approach to Coefficient Identification*, MSc thesis 2011.
5. David Larsson: *Generalized Riemann Integration: Killing Two Birds with One Stone?* BSc thesis 2013.
6. Jonathan Andersson: *Asymptotic Behaviour and Effective Boundaries for Age-structured Population Models in a Periodically Changing Environment*, MSc thesis 2017.
7. Anton Karlsson: *Population Models with Age and Space Structure*, BSc thesis 2017.
8. Emma Lindgren: *Solving ill-posed problems with mollification and an application in biometrics*, BSc thesis 2018.
9. Olivia Linder: *Solving an inverse problem for an elliptic equation using a Fourier-sine series*, BSc thesis 2019.

Administrative Work and Leadership

- Deputy member in the Programme Board for Mathematics and Natural Sciences, Linköping University, 2000–2001
- Ordinary member in the Programme Board for Mathematics and Natural Sciences, Linköping University, 2001–2005
- Head of the Division of Mathematics, Department of Mathematics, Linköping University, 2003–2010
- Director for PhD Studies, Department of Mathematics Linköping University, 2003–2013
- Deputy member in the Programme Board for Electrical Engineering, Physics, and Mathematics, Linköping University, 2006–2017
- Deputy member in the Departmental Board, Department of Mathematics, Linköping University, 2014–2017
- Member of the Regional Steering Committee for the *East African Centre for Mathematical Research* (EACMaR), 2019–
- Africa Coordinator, Linköping University, 2020–

International Projects in Low-income Countries

- Project leader for the Sida-funded collaboration between the Department of Mathematics, Linköping University, the Department of Mathematics, Stockholm University, and the Department of Mathematics, National University of Rwanda/University of Rwanda, Rwanda, 2007–2019
- Project leader for a collaboration funded by the Linnaeus–Palme Programme between the Department of Mathematics, Linköping University, and the Department of Mathematics, University of Cape Coast, Ghana, 2008–2013
- Overall Coordinator on the Swedish side for the Sida-funded bilateral research programme at National University of Rwanda/University of Rwanda, Rwanda, 2011–
- Responsible for the mathematics part in a collaboration funded by the Linnaeus–Palme Programme between the Linköping University and University of Nairobi, 2014–2015
- Project leader for the Sida-funded collaboration between the Departments of Mathematics, Linköping University, Mälardalen University, the Royal Institute of Technology, Stockholm University, Uppsala University, and the Department of Mathematics, Makerere University, Uganda, 2015–

- Project leader for the Sida-funded collaboration between the Departments of Mathematics, Linköping University, Mälardalen University, the Royal Institute of Technology, Stockholm University, Uppsala University, and the Department of Mathematics, University of Dar es Salaam, Tanzania, 2015–
- Project leader for the Sida-funded collaboration between the Departments of Mathematics, Linköping University, Luleå Technical University, Mälardalen University, Stockholm University, Uppsala University, Örebro University and the Department of Informatics and Mathematics, Eduardo Mondlane University, Mozambique, 2017–
- Project leader for the Sida-funded collaboration between the Department of Mathematics, Linköping University, the Department of Mathematics, Stockholm University, and the Department of Mathematics, Royal University of Phnom Penh, Cambodia, 2019