

Curriculum Vitae

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Name: Matti Juhani Lassas

Date and place of birth: 1969, Helsinki, Finland.

Contact information

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Education and degrees

Ph.D. (Mathematics) at University of Helsinki 1996,

Master of science (Mathematics) at University of Helsinki 1992.

Current positions

-Professor of Applied Mathematics at University of Helsinki, 2009-

-Academy professor of Academy of Finland (2014-2018).

Most important academic positions

2013 Academy professorship in Academy of Finland for the period 2014-2018 (a full-time research position).

2010 Research professorship at Mathematical Sciences Research Institute (MSRI) at Berkeley (August-November).

2009– Professor of Applied Mathematics at University of Helsinki.

2004–2008 Professor of Mathematics at Helsinki University of Technology.

2002–2004 Research Fellow of Academy of Finland.

1998–2001 Postdoctoral fellowship of Academy of Finland.

Most important visits abroad

2013, April-May Member of Inverse problems research semester at the Mittag-Leffler Institute, Stockholm, Sweden.

2012, April Visiting Fellow at the Fields Institute, Toronto, Canada.

2011, July-Sep. Visiting Fellow at the Newton Institute, Cambridge, UK.

2010, Autumn Research professor at Mathematical Sciences Research Institute (MSRI) at Berkeley, USA.

2001, Autumn Member of Inverse problems research semester at MSRI.

1998–1999 Visiting scholar at University of Washington, USA.

Ph.D. thesis supervised

Kenrick Bingham, Ph.D. 2005.

Tapio Helin, Ph.D. 2010.

Pekka Tietäväinen, Ph.D. 2011.
Lauri Oksanen, Ph.D. 2012.
Esa Niemi, Ph.D. 2015, co-supervisor Samuli Siltanen.
Hanne Kekkonen, current Ph.D. student, co-supervisor Tapio Helin.
Jussi Korpela, current Ph.D. student,
Teemu Saksela, current Ph.D. student,
Paola Elefante, current Ph.D. student, co-supervisor Samuli Siltanen.
Matt Robinson, current Ph.D. student, co-supervisor Gunther Uhlmann.

Selected academic awards:

Calderón prize of International Inverse Problems Association (IPIA) in 2007.
Väisälä prize of Finnish Academy of Science and Letters for achievements on mathematics in 2004.

Young researcher's grant (a three year research grant) by University of Helsinki at 1995.

Rolf Nevanlinna doctoral thesis award for the best doctoral thesis in mathematics in Finland in 1995.

Ernst Lindelöf prize for best master thesis in mathematics at Univ. of Helsinki in 1992.

Award for best master thesis in natural sciences at Univ. of Helsinki in 1992.

Membership of scientific societies and academies

The Finnish Academy of Science and Letters, Finnish mathematical society, European Mathematical Society, SIAM, Finnish Inverse Problems Society.

Plenary lectures and named lectures (since 2007)

2015 –Plenary talk international Conference on Inverse Problems, Imaging, and Applications, Hangzhou, China

-Plenary talk at AS Workshop on Inverse Problems, Imaging and PDE, Hong Kong.

2014 -Plenary talk at Inverse Problems and Imaging Conference Institut Henri Poincare, Paris.

-Plenary talk at Recent progress for mathematical and numerical analysis of inverse problems, CIRM, Marseille, France.

-Plenary talk at Sparse Regularisation for Inverse Problems Newton Institute, Cambridge, UK,

2013 -Plenary talk at Inverse problems and Geometry, Banff, Canada.

-Keynote talk at Progress In Electromagnetics Research Symposium, Stockholm, Sweden.

- 50 minute talk at the "Asymptotic Analysis in General Relativity" conference, Cergy-Pontoise, France.
- Plenary talk at the opening conference of Inverse problems Center at University College London, UK.
- Plenary talk at the conference "Inverse Problems and Applications" Linköping, Sweden.
- 2012 -Plenary talk at the "Inverse Problems Africa" Conference, Bahir Dar, Ethiopia.
- Plenary talk at the conference "Inverse Problems: Modeling and Simulatio", Antalya, Turkey.
- Plenary talk at "Fourier Analysis and Pseudo-Differential Operator", a satellite conference of the 6th EMS conference, Espoo, Finland.
- Plenary talk at the conference "Inverse Problems: Modeling and Simulatio", Antalya, Turkey.
- Plenary talk at Gunther Uhlmann's 60th Birthday conference, Irvine.
- Plenary talk at Inverse Problems and PDE Control, Chengdu, China.
- 2011 -Plenary talk at the Finnish-Japanese-Korean conference on Inverse Problems, Helsinki.
- Plenary talk at the conference "Inverse Problems in Analysis and Geometry", Newton Institute, Cambridge, UK.
- Plenary talk at the conference "Analytic and Geometric Methods in Medical Imaging", Newton Institute, Cambridge, UK.
- 2010 -Plenary talk at the conference "Inverse Problems and Applications". MSRI, Berkeley, USA.
- Plenary talk at the conference "Multiscale Modeling, Simulation and Optimization", Erlangen, Germany.
- Plenary talk at WIPA2010 (Inverse Problems and Applications), Valpaiso, Chile.
- 2009 -Plenary talk at the conference "Control Theory and Inverse problems, theoretical and numerical aspects", CIRM, Luminy, France.
- 2007 -The Calderon prize lecture at Applied Inverse problems 2007 conference, Vancouver, Canada.
- Fabes lectures 2007, Seoul, South Korea.
- 80 minutes invited lecture in the conference "Inverse Problems in Applied Sciences – towards breakthrough", Sapporo, Japan.

Also, 4 other plenary talks in 2003-2006, 37 invited talks in international conferences since 1998 and 7 courses given in international summer schools.

Positions of trust and administration

- 2015 Member of organizing committee of Inverse problems trimester to be held at Institut Henri Poincare (IHP).
- 2015 Member of organizing committee of "Applied Inverse Problems 2015" conference at Helsinki, Finland.
- 2014 Chair of organizing committee of "Distinguished lectures on inverse problems" conference at Helsinki, Finland.
- 2013– Director of the Center of Excellence on Inverse Problems Research of the Academy of Finland.
- 2011– President of the Finnish Mathematical Society.
- 2010–2015 Director of the Finnish Inverse Problems Doctoral Program.
- 2010– Member of steering committee of the Inverse Problems International Association (IPIA).
- 2011 Chair of the organizing committee the starting workshop at Newton Institute Inverse Problems programme.
- 2007–2010 Member of the Advisory board of IPIA.
- 2009 Member of the Rolf Nevanlinna dissertation prize committee.
- 2009 Member of the Calderon prize committee of IPIA.
- 2006– Member of the Board and a team leader in the Center of Excellence on Inverse Problems Research of the Academy of Finland.
- 2005– Member of the Board of Finnish Mathematical Society.
- 2004–2015 Member of the Board of Doctoral Program on Inverse Problems.
- 2004–2008 Member of the Board of Graduate school on applied Electromagnetism.
- 2003– Member of the Board of the Finnish Inverse Problems Society.
- 2002–2003 Member of the Board of Rolf Nevanlinna Institute.

Also, membership of organizing committies of 12 international conferences since 2003.

Editorial positions:

Editor of the journal *Abstract and Applied Analysis* published by Abstract and Applied Analysis, 2012-present.

Editor of the journal *Inverse Problems and Imaging* published by American Institute of Mathematical Sciences (AIMS), 2012-present.

Managing editor of the journal *Inverse Problems and Imaging*, 2006-2011.

Guest editor of special issue of *Journal of Mathematical Biology* (published by Springer) on inverse problems, published in 2013.

Experience in scientific project managing:

- 2012– Principal investigator of the project Computational and mathematical models for electromagnetic wave interaction with complex material structures, Academy of Finland.
- 2011–2014 Principal investigator of the project Sparsity and Inverse Problems in Infinite-Dimensional Models, Academy of Finland.
- 2008– Research team leader in the Finnish Center of Excellence on the Inverse Problems funded by of the Academy of Finland.
- 2006–2008 Group leader (with prof. Somersalo) of the Helsinki University of Technology research group in the Finnish Center of Excellence on the Inverse Problems funded by of the Academy of Finland.
- 2005–2008 Principal investigator of the Helsinki University of Technology partner in the project Inverse problems and reliability of measurements funded by Finnish National Technology Agency (Tekes).
- 2004–2007 Principal investigator of the Helsinki University of Technology partner in a project studying 3D X-ray tomography funded by PaloDex Group and Tekes.
- 2002–2005 Principal investigator of the project Inverse problems. Academy of Finland.
- 2000–2004 Principal investigator of the project Geometrical Methods in Anisotropic Inverse Problems. Academy of Finland.
- 2002–2004 Principal investigator of the Rolf Nevanlinna Institute partner in the project Statistical methods in radiology funded by Tekes, GE Healthcare, Invers Ltd.

Summary on scientific publications.

1 international research monograph, 1 monograph dissertation, 86 appeared or accepted papers in refereed international journals, 24 papers in edited collections or conference proceedings, 3 US patents, and 7 submitted papers. H-index (ISI web of science): 23.

Public outreach

Our research on invisibility cloaking and electromagnetic wormholes has been discussed in the news sections of general scientific journals, including the following articles:

“Schrödinger’s Hat Uses Invisibility to Measure Quantum World”, *Wired* (31 May 2012),

“Matter waves: Cloaking matters”, *Nature Physics* 5, 16 (Jan 2009),

“Optics: Watch your bac”, *Nature* 451, 27-27 (02 Jan 2008),

“Metamaterials: Lost in space”, *Nature Photonics* 2, 11-11 (01 Jan 2008),
“Envision This: Mathematicians Design Invisible Tunnel”, *Scientific American* May 4, 2007,
‘Light wormholes could wire space invisibly”, *Nature* 450, 330-331 (14 Nov 2007).