

# Curriculum Vitae: Matti Lassas (August 23, 2024)

## Personal details and date of CV

- **Name:** Matti Juhani Lassas
- **Date and place of birth:** 1969, Helsinki, Finland.

## 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-present.  
Director of the Centre of Excellence on Inverse modelling and imaging 2018-2025.  
PI in the FAME Flagship and the Finnish Quantum Flagships 2024-2031.

## Most important earlier academic positions

2014-2023 Academy professor of Research Council of Finland (RCF) in the periods 2014-2018 and 2019-2023 (full-time research positions, each 5 years).  
2010 Research professor at Mathematical Sciences Research Institute (MSRI) at Berkeley (August-November).  
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.

## Research funding: Selected grants and experience in scientific project managing

2024-2029 European Research Council (ERC) Advanced grant, 2.498.644 €.  
2018-2025 Director and PI of the Centre of Excellence on Inverse Modelling and Imaging, RCF. Total funding 10.257.712 €.  
2019-2029 Academy professor, RCF. Funding for PI's salary 781.195 € and additional funding for the research group 1.099.843 €  
2014-2017 Director and PI of the Centre of Excellence on Inverse Problems. Total funding for the CoE 3.381.000 €.  
2014-2017 PI of the research project inviting a RCFs Finnish Distinguished Professor to Finland 1.109.000 EUR.  
2014-2018 Academy professor, RCF. Funding for PI's salary and additional funding funding for research group 1.080.000 €  
2012-2016 PI of the project Computational and mathematical models for electromagnetic wave interaction with complex material structures, Academy of Finland. 203.000 €.  
2011-2014 PI of the project Sparsity and Inverse Problems in Infinite Dimensional Models, Academy of Finland. 264.000 €.  
2004-2011 PI of several projects funded by RCF and Business Finland.

## Summary on research output and scientific publications

164 appeared or accepted papers in refereed journals (including: CPAM, CMP, Duke, Forum Mathematics Pi, Found. Comput. Math., Inventiones., JEMS, PNAS, 6 different SIAM journals; physics journals PRL, New J. Phys.) 41 papers in edited collections or conference proceedings (including machine learning conferences NeurIPS, COLT, ICML), 5 US patents, 1 patent application.

**Number of citations.** ISI web of science 4915, Google Scholar 10117, MathSciNet 3341.

**H-index.** 39 (ISI web of science) and 49 (Google Scholar).

### **Ph.D. thesis supervision**

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 S. Siltanen), Hanne Kekkonen (Ph.D. 2016, co-supervisor T. Helin), Teemu Saksala (Ph.D. 2017), Jussi Korpela (Ph.D. 2023), Antti Kujanpää (Ph.D. 2023), Lauri Ylinen (Ph.D. 2024), Anna Suomenrinne-Nordvik (current Ph.D. student, co-supervisor S. Vänskä), Salla Latva-Äijö (current Ph.D. student, co-supervisors S. Siltanen), Elli Karvonen (current Ph.D. student, co-supervisors S. Siltanen, P. Pankka), Petr Kulikov (current Ph.D. student, co-supervisors L. Oksanen).

### **Selected academic awards, nominations, and invited talks**

-Invited speaker of European Congress of Mathematician ECM 2023 in Sevilla.

-European Research Council (ERC) Advanced grant 2022 (Geometric Methods in Inverse Problems for Partial Differential Equations)

-E.J. Nyström Prize of the Finnish Society of Sciences And Letters in 2020.

-Member of The Finnish Society of Sciences and Letters, since 2020.

-Invited talk in International Congress of Mathematicians ICM2018 in the section of Control Theory and Optimization.

-Member of Finnish Academy of Science and Letters, since 2012, and the chair of the group of Mathematics and Computer Science, since 2024.

-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.

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

### **Editorial positions**

Editor of the journal *SIAM Journal on Applied Mathematics*, SIAM, 2023-

Editor of the journal *Communications on Analysis and Computation*, 2023-

Editor of the journal *Research in Mathematical Sciences*, Springer, 2022-

Editor of the journal *Inverse Problems and Imaging*, 2012-present.

Editor of the journal *Abstract and Applied Analysis*, 2012-2019.

Managing editor of *Inverse Problems and Imaging* (founding managing editor), in 2006-2011.

Guest editor of special issue of *Journal of Mathematical Biology* on inverse problems, 2013.

### **Selected positions of trust and administration**

2023- Chairman of the group of Mathematics and Computer Science of the Finnish Academy of Science and Letters.

2023 Vice president of the Inverse Problems International Association.

2022 Chair of the local organization committee of the ICM 2022 opening session committee (the opening session included the Fields Medal ceremony and the prize lectures, Helsinki, Finland, July 2022).

2018-2024 Chair of Mathematics Foundation of Finnish Academy of Letter and Science.

2017- The representative of Finnish Mathematical Society in International Council for Industrial and Applied Mathematics (ICIAM).

2017- Director of Master programme on Mathematics and Statistics, University of Helsinki.

2015 Member of organizing committee of Inverse problems trimester held at Institut Henri Poincare (IHP).

- 2011–2016 *President of the Finnish Mathematical Society.*
- 2010–2015 *Director of the Finnish Inverse Problems Doctoral Program.*
- 2005–2011 *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.*

**Selected membership of organizing committees of conferences (since 2008):**

- 2024- *Member of the organizing committee of Inverse Problems and Applications program in Simons Laufer Mathematical Sciences Institute (SLMath/MSRI), Berkeley, USA (to be held in Fall 2027).*
- 2024 *Member of the organizing committee of IPPhys2024 Inverse Problems in the Physical Sciences, Puerto Varas, Chile.*
- 2022 *Co-chair of the organizing committee of the conference Inverse problems in analysis and geometry, Helsinki.*
- 2020 *Chair of organizing committee of Inverse problems and non-linearity conference (by zoom in 2020), Finland.*
- 2019 *Member of organizing committee of Applied Inverse problems 2018 conference (AIP 2018), Grenoble, France.*
- 2018 *Member of organizing committee of The 9th International Conference on Inverse Problems and Related Topics ICIP2018, Singapore.*
- 2018 *Member of organizing committee of 150 years of Finnish Mathematical Society. Helsinki, Finland.*
- 2017 *Member of organizing committee of the conference Applied Inverse Problems 2017, Hangzhou, China.*
- 2016 *Member of scientific committee of URSI Electromagnetic Theory Symposium conference, Aalto University, Finland.*
- 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 (AIP 2015) at Helsinki, Finland.*
- 2014 *Chair of organizing committee of Distinguished lectures on inverse problems conference at Helsinki, Finland.*
- 2011 *Chair of the organizing committee the starting workshop at Newton Institute Inverse Problems programme.*
- 2011 *Chair of Newton institute opening conference of Inverse problems semester, Cambridge, UK*
- 2009 *Member of program committee of the conference Applied Inverse Problems AIP 2009, Vienna, Austria.*
- 2008 *Member of Scientific committee of the conference Control and inverse problems for PDEs, Marseille, France.*

**Public outreach**

Our research on invisibility cloaking has been discussed in the news sections of scientific journals:

[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 back](#), *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, (14 Nov 2007).