

Curriculum Vitae

Lars Hesselholt

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- PERSONAL Born September 25, 1966 at Viborg, Denmark. Married. Danish citizen; Japanese permanent resident. ORCID: 0000-0002-3324-2407.
- EDUCATION Ph.D., Aarhus University, 1994
M.S., Aarhus University, 1992
B.S., Aarhus University, 1988
- POSITIONS *Professor*, University of Copenhagen, 2018–present
Professor, Nagoya University, 2008–present
Associate Professor (with Tenure), Massachusetts Institute of Technology, 2003–2009
Associate Professor, Massachusetts Institute of Technology, 2001–2003
Assistant Professor, Massachusetts Institute of Technology, 1997–2001
Visiting Assistant Professor, Princeton University, 1997–1998
C.L.E. Moore Instructor, Massachusetts Institute of Technology, 1994–1997
Postdoctoral Fellow, Institut Mittag-Leffler, Spring 1994
- SELECTED VISITING POSITIONS *Niels Bohr Professor*, University of Copenhagen, April 2013–March 2018
Rothschild Distinguished Visiting Fellow, Isaac Newton Institute, September 2018
Visiting Professor, Université de Rennes, March 2010
Visiting Professor, Nagoya University, 2006–2008
Visiting Professor, Institut Henri Poincaré, May 2004
- SELECTED INVITED LECTURES *Ellis R. Kolchin Memorial Lecture*, Columbia University, New York, 2019
Felix Klein Lectures, Universität Bonn, Bonn, Germany, 2016
Kempf Lectures, Johns Hopkins University, Baltimore, Maryland, 2007
AMS Sectional Meeting, Montreal, Canada, 2002, Invited Address
International Congress of Mathematicians, Beijing, China, 2002, Invited Speaker
- AWARDS AND HONORS Clay Senior Scholar, 2014 (USD20,000)
Danish National Research Foundation Niels Bohr Professorship, 2013–2018 (DKK30,000,000)
Foreign Member of the Royal Danish Academy of Sciences and Letters
Fellow of the American Mathematical Society Inaugural Class
Japan Society for the Promotion of Science grant, 2011–2016 (JPY19,850,000)
National Science Foundation Grant (Co-PI), 1995–1998 (USD476,166), 1998–2003 (USD802,000), 2003–2009 (USD1,375,000)
Alfred P. Sloan Fellowship, 1998 (USD35,000)
- POSTDOCS MENTORED *Dustin Clausen*, University of Copenhagen, 2013–2018. Assistant, Bonn.
Christopher Davis, University of Copenhagen, 2013–2014. Lecturer, UC Irvine.

- PHD STUDENTS *Daria Poliakova*, University of Copenhagen, 2021 (expected).
Malte Leip, University of Copenhagen, 2020 (expected).
Martin Speirs, University of Copenhagen, 2018 (expected).
Ryo Horiuchi, University of Copenhagen, 2018 (expected).
Amalie Høgenhaven, University of Copenhagen, 2017. Software Developer, Edlund.
Sho Saito, Nagoya University, 2014. Project Researcher, IPMU.
Chad Musick, Nagoya University, 2012.
Teena Gerhardt, MIT, 2007. Associate Professor, Michigan State University.
Daniel Vera, MIT, 2006. Senior Associate, Picoco LLC.
Viorel Costeanu, MIT, 2004. Executive Director, J. P. Morgan.
- TEACHING COURSES
ACTIVITIES Courses taught at all levels ranging from introductory linear algebra to advanced topics courses at Massachusetts Institute of Technology, Nagoya University, and University of Copenhagen.
- CONFERENCES
CO-ORGANIZED *Algebraic K-Theory*, Oberwolfach, Germany 2019.
Topological Cyclic Homology, Arbeitsgemeinschaft, Oberwolfach, Germany, 2018.
Topological Hochschild Homology and Integral p -Adic Hodge Theory, Hanamura, Nagano, Japan 2017.
Moduli and Traces, University of Copenhagen, Denmark, 2017.
Algebra in Geometry, University of Copenhagen, Denmark, 2016.
Witt Vectors in Arithmetic, Geometry, and Topology, University of New Mexico, Albuquerque, USA, 2012.
Witt Vectors, Foliations, and Absolute de Rham Cohomology, Nagoya University, Japan, 2010.
Aarhus Topology 2002, Aarhus University, Denmark, 2002.
- EDITORIAL *Journal of the American Mathematical Society*, Associate Editor 2015 – 2023.
Nagoya Mathematical Journal, Editor 2010 – 2012, Managing Editor 2012 – present.
Selecta Mathematica, Editor 2007 – present.
International Mathematics Research Notices, Editor 2016 – 2018.
Journal of Topology, Editor 2018–2023.
Documenta Mathematica, Editor 2003 – 2014.
- SERVICE Core Member of Algebra Panel for speaker selection to International Congress of Mathematicians, Seoul, 2014.
Board Member, Institut Mittag-Leffler, 2017–present.
Board Member, Foundation Nagoya Mathematical Journal, 2017–present.
- RESEARCH PAPERS
1. L. Hesselholt, *A homotopy theoretical derivation of $Q\text{Map}(K, -)_+$* , Math. Scand. **70** (1992), 193–203.
2. L. Hesselholt, I. Madsen, *The S^1 -Tate spectrum for J* , Bol. Soc. Math. Mexicana. **37** (1992), 215–240.
3. L. Hesselholt, *Stable topological cyclic homology is topological Hochschild homology, K -theory* (Strasbourg, 1992), 8–9, 175–192, Astisque, 226, 1994.
4. T. Geisser, L. Hesselholt, *Topological cyclic homology of schemes*, Algebraic K -theory (Seattle, WA, 1997), 41–87, Proc. Sympos. Pure Math., 67, Amer. Math. Soc., Providence, RI, 1999.

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5. L. Hesselholt, I. Madsen, *On the K -Theory of finite algebras over Witt vectors of perfect fields*, *Topology* **36** No. 1 (1997), 29–102.
6. L. Hesselholt, *On the p -typical curves in Quillen’s K -theory*, *Acta Math.* **177** No. 1 (1997), 1–53.
7. L. Hesselholt, I. Madsen, *Cyclic polytopes and the K -theory of truncated polynomial algebras*, *Invent. Math.* **130** (1997), 73–97.
8. L. Hesselholt, *Witt vectors of non-commutative rings and topological cyclic homology*, *Acta Math.* **178** (1997), 109–141; Correction to “Witt vectors of non-commutative rings and topological cyclic homology”, *Acta Math.* **195** (2005), 55–60.
9. L. Hesselholt, I. Madsen, *On the K -theory of nilpotent endomorphisms*, *Homotopy Methods in Algebraic Topology (Boulder 1999)*, 127–140, *Contemp. Math.*, 271, Amer. Math. Soc., Providence, RI, 2000.
10. L. Hesselholt, I. Madsen, *On the K -theory of local fields*, *Ann. of Math.* **158** (2003), 1–113.
11. T. Geisser, L. Hesselholt, *On the K -theory of complete regular local \mathbf{F}_p -algebras*, *Topology* **45** (2006), 475–493.
12. T. Geisser, L. Hesselholt, *On the K -theory and topological cyclic homology of smooth schemes over a discrete valuation ring*, *Trans. Amer. Math. Soc.* **358** (2006), 131–145.
13. L. Hesselholt, I. Madsen, *On the de Rham-Witt complex in mixed characteristic*, *Ann. Sci. Éc. Norm. Sup.* **37** (4) (2004), 1–43.
14. L. Hesselholt, *Topological Hochschild homology and the de Rham-Witt complex for $\mathbf{Z}_{(p)}$ -algebras*, *Homotopy Theory: Relations with Algebraic Geometry, Group Cohomology, and Algebraic K-Theory (Evanston, IL, 2002)*, pp. 253–259, *Contemp. Math.* 346, Amer. Math. Soc., Providence, RI, 2004.
15. L. Hesselholt, *Algebraic K -theory and trace invariants*, *Proceedings of the International Congress of Mathematicians (Beijing 2002)*, pp. 415–425, World Scientific, Beijing, China, 2002.
16. L. Hesselholt, *Galois cohomology of Witt vectors of algebraic integers*, *Math. Proc. Cambridge Philos. Soc.* **137** (2004), 551–557.
17. T. Geisser, L. Hesselholt, *The de Rham-Witt complex and p -adic vanishing cycles*, *J. Amer. Math. Soc.* **19** (2006), 1–36.
18. L. Hesselholt, *The absolute and relative de Rham-Witt complexes*, *Compositio Math.* **141** (2005), 1109–1127.
19. T. Geisser, L. Hesselholt, *Bi-relative algebraic K -theory and topological cyclic homology*, *Invent. Math.* **166** (2006), 359–395.
20. L. Hesselholt, *On the topological cyclic homology of the algebraic closure of a local field*, *An Alpine Anthology of Homotopy Theory: Proceedings of the Second Arolla Conference on Algebraic Topology (Arolla, Switzerland, 2004)*, pp. 133–162, *Contemp. Math.* **399**, Amer. Math. Soc., Providence, RI, 2006.
21. L. Hesselholt, *On the K -theory of the coordinate axes in the plane*, *Nagoya Math. J.* **185** (2007), 93–109.
22. L. Hesselholt, *The tower of K -theory of truncated polynomial algebras*, *J. Topol.* **1** (2008), 87–114.
23. L. Hesselholt, *On the Whitehead spectrum of the circle*, *Algebraic Topology. The Abel Symposium 2007. Proceedings of the Fourth Abel Symposium, Oslo, Norway, August 5–10, 2007*, 131–184, *Abel Symposia* **4**, Springer-Verlag, Berlin, 2009.
24. V. Angeltveit, T. Gerhardt, L. Hesselholt, *On the K -theory of truncated polynomial algebras over the integers*, *J. Topol.* **2** (2009), 277–294.
25. T. Geisser, L. Hesselholt, *On the relative and bi-relative K -theory of rings of finite characteristics*, *J. Amer. Math. Soc.* **24** (2011), 29–49.

RESEARCH
PAPERS
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26. T. Geisser, L. Hesselholt, *On the vanishing of negative K -groups*, Math. Ann. **348** (2010), 707–736.
27. T. Geisser, L. Hesselholt, *On a conjecture of Vorst*, Math. Z. **270** (2012), 445–452.
28. L. Hesselholt, *The big de Rham-Witt complex*, Acta Math. **214** (2015), 135–207.
29. A. J. Berrick, L. Hesselholt, *Topological Hochschild homology and the Bass trace conjecture*, J. reine angew. Math. **704** (2015), 169–185.
30. L. Hesselholt, *On the K -theory of planar cuspidal curves and a new family of polytopes*, Algebraic Topology: Applications and New Directions (Stanford, CA, July 23–27, 2012), pp. 145–182, Contemp. Math. 620, Amer. Math. Soc., Providence, RI, 2014.
31. L. Hesselholt, *Topological Hochschild homology and the Hasse-Weil zeta function*, An Alpine Bouquet of Algebraic Topology (Saas Almagell, Switzerland, 2016), pp. 157–180, Contemp. Math. 708, Amer. Math. Soc., Providence, RI., 2018.
32. L. Hesselholt, M. Larsen, A. Lindenstrauss, *On the K -theory of division algebras over local fields*, arXiv:1807.00104.