

Thomas Hermann Geisser

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Rikkyo University
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Personal

Date of Birth: 2/28/1966
Birthplace: Wuppertal, Germany
Citizenship: German

Ph.D.

Date: 5/1994
Place: Universität Münster
Advisor: Christopher Deninger
Grade: Magna Cum Laude

Diplom

Date: 9/1990
Place: Universität Bonn
Advisor: Günther Harder
Grade: Mit Auszeichnung

Awards

Sloan Research Fellowship 2000
Alexander von Humboldt Research Award 2021

Professional Experience

Rikkyo University, Professor	4/2015-	now
Nagoya University, Professor	4/2010-	3/2015
University of Tokyo, Visiting Professor	8/2009-	3/2010
University of Southern California, Professor	9/2006-	3/2010
University of Southern California, Associate Professor	9/2002-	8/2006
University of Southern California, Assistant Professor	9/2000-	8/2002
University of Tokyo, JSPS-fellow	9/1998-	8/2000
University of Illinois at Urbana-Champaign, Visiting Assistant Prof.	1/1998-	6/1998
Universität Essen, Researcher	1/1997-	12/1997
Harvard University, Visiting Scholar	1/1996-	12/1996
Max Planck Institut für Mathematik Bonn, Visitor	10/1995-	12/1995
Harvard University, Visiting Scholar	10/1994-	9/1995
Universität Münster, Assistant	7/1993-	9/1994
Harvard University, Visiting Fellow	9/1992-	6/1993
Universität Münster, Assistant	10/1990-	8/1992
Universität Bonn, Assistant	4/1988-	9/1990

Research Interests

Arithmetic algebraic geometry
Higher algebraic K -theory
Motivic cohomology

Editorial

Documenta Mathematica 11/2015–
Commentarii Mathematici Universitatis Sancti Pauli 4/2015–

Grants/Scholarships

Japanese Society for the Promotion of Science 4/2018-3/2023
Japanese Society for the Promotion of Science 4/2011-3/2016
National Science Foundation 7/2009-6/2011
Japanese Society for the Promotion of Sciences 3/2008-7/2008
National Science Foundation 7/2006-6/2009
National Science Foundation 7/2003-6/2006
Japanese Society for the Promotion of Sciences 4/2002-8/2002
National Science Foundation 7/2000-6/2003
(with W.Raskind and V.Scharaschkin)
Japanese Society for the Promotion of Sciences 9/1998-8/2000
Deutsche Forschungsgesellschaft (Germany) 1/1996-12/1996
Deutsche Forschungsgesellschaft (Germany) 10/1994-9/1995
Deutsch Akademischer Austauschdienst (Germany) 9/1992-6/1993
Studienstiftung des deutschen Volkes (Germany) 10/1985-9/1990

Conference Organization

Co-organizer Oberwolfach conference "Algebraic K-theory" 5/2022
Co-organizer Oberwolfach conference "Algebraic K-theory" 6/2019
Co-organizer International Conference on Motives, Tokyo 2/2019
Co-organizer Shuji Saito's 60th birthday, Tokyo 3/2018
Co-organizer Oberwolfach conference "Algebraic K-theory" 6/2016
Co-organizer International Conference on Motives, Tokyo 2/2016
Co-organizer International Conference on Motives, Tokyo 12/2014
Co-organizer Oberwolfach conference "Algebraic K-theory" 6/2013
Co-organizer International Conference on Motives, Tokyo 11/2013
Co-organizer International Conference on Motives, Tokyo 12/2012
Co-organizer International Conference on Motives, Tokyo 12/2011
Co-organizer International Conference on Motives, Tokyo 12/2010
Co-organizer International Conference on Motives, Tokyo 12/2009
Co-organizer Oberwolfach conference "Algebraic K-theory" 6/2009
Co-organizer Workshop on Motives, Tokyo 12/2008
Co-organizer Workshop on Motives, Tokyo 7/2007
Co-organizer Workshop on Motives, Tokyo 12/2005
Co-organizer section at AMS-meeting 4/2004
Co-organizer Oberwolfach conference "Homotopy theory of varieties" 3/2004
Co-organizer Workshop on homotopy theory of varieties Yatsugatake 9/2002

Invited Presentations at Conferences

Algebraic K -theory	Fields Institute	3/1994
Arithmetic algebraic geometry	Oberwolfach	7/1994
Algebraic K -theory	Paris	7/1994
Homotopy theory and algebraic K -theory	Oberwolfach	11/1995
Algebraic K -theory	Oberwolfach	6/1996
Section on K -theory	AMS-meeting Lawrenceville	10/1996
Algebraic Geometry	Leiden	3/1997
Algebraic K -theory	Seattle	7/1997
Algebraic Cycles	Newton Institute, Cambridge	2/1998
Great Lakes K -theory	Notre Dame	3/1998
Homotopy theory of alg. varieties	MSRI	5/1998
Algebraic Cycles	Banff	6/1998
Algebraic Number Theory	Kyoto	12/1998
Algebraic K -theory and Homotopy Theory	Münster	6/1999
Algebraic K -theory	Oberwolfach	9/1999
Algebraic Number Theory	Kyoto	1/2000
Homotopy Theory of Algebraic Varieties	Toulouse	6/2000
Number theory	Waseda, Tokyo	3/2002
Algebraic K -theory	Oberwolfach	8/2002
Special section on K -theory	ICM, Beijing	8/2002
Homotopy theory and geometry	Newton Institute	10/2002
Great Lakes K -theory	Fields Institute	5/2003
Trace Methods in Algebraic K -theory	Universitaet Muenster	10/2003
Algebraic Number Theory	RIMS, Kyoto	12/2003
Algebraic Number Theory	University of Hyderabad, India	12/2003
Joint AMS-Indian Math. Soc. Meeting	Bangalore, India	12/2003
Arithmetic Algebraic Geometry	University of Tokyo	2/2004
Algebraic K -theory	University of Montreal	10/2004
Arithmetic Geometry	University of Florida	2/2005
Number Theory	Oberwolfach	6/2005
Algebraic Geometry	Hiroshima University	7/2005
Meeting of Japanese Math. Society	Tokushima University	8/2005
Regulators II	Banff	12/2005
Motivic Cohomology	Tokyo University	12/2005
Great Lakes K -theory	UIC Chicago	4/2006
Algebraic K -theory	Oberwolfach	7/2006
Arithmetic Algebraic Geometry	RIMS, Kyoto	9/2006
Algebraic Geometry	Kinosakionsen, Japan	10/2006
Algebraic Number Theory	RIMS, Kyoto	12/2006
Workshop on Motivic Cohomology	Regensburg	2/2007
Workshop on Motives and Applications	Hiroshima	3/2007
Homotopy of Varieties	Fields Institute, Toronto	3/2007
Algebraic K -theory and its Applications	Trieste	5/2007

Finiteness of motives and motivic cohomology	Regensburg	2/2009
Counting rational points on varieties	Leiden	4/2009
Workshop on motivic cohomology	Tanbara	5/2009
Homotopy theory of schemes	Muenster	7/2009
Plenary talk, meeting of the Japanese Math. Soc.	Osaka	9/2009
Arithmetic Geometry	Essen	2/2010
Homotopy theory of schemes, Regulators III	Oberwolfach	5/2010
Arithmetic and Motivic Algebraic Geometry	Barcelona	7/2010
Conference in honor of A.A.Suslin	Regensburg	2/2011
Algebraic Cycles and the Geometry of Group Orbits	Los Angeles	3/2011
Algebraic Cycles and L-functions	Canberra	9/2011
Cycles, motives and homotopy theory	Regensburg	2/1012
Algebraic K-theory and arithmetic	Essen	6/2012
Algebraic Number theory	Bedlewo	7/2012
Homotopical Methods in Algebraic Geometry	Kyoto	12/2012
Workshop on Reciprocity Sheaves	Los Angeles	5/2013
Global Fields	Yatsugatake	8/2013
Number theory	Moscow	9/2013
Uwe Jannsen's 60th birthday	Kyushu University	1/2014
Motivic and etale homotopy theory, Workshop on Motives	Regensburg	3/2014
Summer School on Algebraic K-theory and Trace Methods	Heidelberg	3/2014
K-theory, Cyclic Homology and Motives, Weibel's 65th Regulators	Tokyo	12/2014
Colloquium on K-theory	Regensburg	8/2015
Workshop on arithmetic geometry 2016	Rutgers	8/2015
Algebro-geometric and homotopical methods	Niseko	9/2015
Etale and motivic homotopy theory EMH 2017	Mumbai	1/2016
Motivic Homotopy Theory	Hakodate	5/2016
Arithmetic Algebraic Geomerty, Terasoma's 60th	Mittag-Leffler Institute	3/2017
Motives in Tokyo	Heidelberg	22.9.2017
	St. Petersburg	11.9.2018
	Tokyo	24.1.2019
	Tokyo	13.2.2019

Invited Seminar and Colloquium Talks

Universität Münster	12/1997	Universität zu Köln	12/1997
University of Utah	2/1998	University of Chicago	3/1998
Northwestern University	4/1998	University of Illinois	2/1999
Brandeis University	2/1999	University of Southern California	2/1999
Tohoku University	11/1999	University of Hongkong	12/1999
Kyushu University	1/2000	Chuo University	5/2000
Nagoya University	5/2000	Tokyo Metropolitan University	6/2000
California Institute of Technology	11/2000	University of Tokyo	12/2000
University of Utah	2/2001	MIT	3/2001
Nagoya University	5/2001	Academia Sinica	5/2001
National University of Singapore	3/2002	Waseda University	5/2002
Tsukuba University	6/2002	Tokyo University	6/2002
California Institute of Technology	10/2002	University of Utah	3/2003
Universität Regensburg	5/2003	Universität Essen	5/2003
Hiroshima University	6/2004	Tohoku University	7/2004
Nagoya University	7/2004	Universitaet Muenster	12/2004
Northeastern University	3/2005	Harvard University	3/2005
University of Tokyo	5/2005	Nagoya University	7/2005
University of Tokyo	1/2006	Caltech	2/2006
University of Utah	2/2006	University of Tokyo	5/2006
Universitaet Bielefeld (2)	6/2006	Universitaet Regensburg	7/2006
Keio University (4)	10/2006	Universitaet Bielefeld	5/2007
Nagoya University	7/2007	Nagoya University	7/2008
Northeastern University	10/2008	Brown University	10/2008
Universität Heidelberg	4/2009	Universität Regensburg	6/2009
Humboldt University Berlin	7/2009	Universität Regensburg	7/2009
Nagoya University	9/2009	Chiba University	11/2009
Paris Nord	9/2010	KAIST (Korea)	10/2010
Tohoku University	1/2011	Universität Heidelberg	9/2011
Wuppertal (Germany),	6/2012	Alfred Renyi Institute (Budapest),	9/2012
Bangkok (Thailand)	12/2012	Universität Duisburg-Essen,	4/2013
St.Petersburg University	9/2013	Chuo University	10/2013
Heidelberg (3 lectures)	3/2014	Tohoku University (Colloquium)	6/2014
Universität Osnabrück	7/2014	Universität Duisburg-Essen	7/2014
Taipei (3 lectures)	12/2015	Freiburg	3/2016
Melbourne	8/2016	Sophia University	5/2017
Lynköping	3/2017	Bordeaux	3/2017
Nagoya	6/2017	Tohoku	5/2018
Chiba	10/2018	Taipei	12/2019

Publications

Refereed publications in journals

1. *Galoiskohomologie reeller halbeinfacher algebraischer Gruppen*,
Abh. Math. Sem. Univ. Hamburg 61 (1991), 231–242
2. *p -adic K -theory of Hecke characters of imaginary quadratic fields*,
Duke Math. J. 86 (1997), 197–238
3. *On K_3 of Witt vectors of length two over finite fields*,
K-Theory 12 (1997), 193–226
4. *Tate's conjecture, algebraic cycles and rational K -theory in characteristic p* ,
K-Theory 13 (1998), 109–122
5. *The K -theory of fields of characteristic p* ,
Invent. Math. 139 (2000), 459–493 (with M.Levine)
6. *The Bloch-Kato conjecture and a theorem of Suslin-Voevodsky*,
J. reine angew. Math. 530 (2001), 55–103 (with M.Levine)
7. *Motivic Cohomology over Dedekind rings*,
Math. Z. 248 (2004), 773–794
8. *Weil-étale cohomology over finite fields*,
Math. Ann. 330 (2004), 665–692
9. *On the K -theory and topological cyclic homology of smooth schemes over a discrete valuation ring*,
Trans. AMS 358 (2006), no. 1, 131–145 (with L.Hesselholt)
10. *The de Rham-Witt complex and p -adic vanishing cycles*.
J. Amer. Math. Soc. 19 (2006), no. 1, 1–36 (with L.Hesselholt)
11. *On the K -theory of regular local F_p -algebras*,
Topology 45 (2006), no. 3, 475–493 (with L.Hesselholt).
12. *Arithmetic cohomology over finite fields and values of zeta-functions*,
Duke Math. J. 133 (2006), no. 1, 27–57.
13. *Bi-relative algebraic K -theory and topological cyclic homology*,
Invent. Math. 166, 359–395 (2006) (with L.Hesselholt).
14. *The affine part of the Picard scheme*,
Compositio Math. 145 (2009), 415–422.
15. *Duality via cycle complexes*,
Ann. of Math. (2) 172 (2010), no. 2, 1095–1126,
16. *Arithmetic homology, and an integral version of Kato's conjecture*,
J. Reine Angew. Math. 644 (2010), 1–22.
17. *On the vanishing of negative K -groups*,
Math. Ann. 348 (2010), no. 3, 707–736, DOI 10.1007/s00208-010-0500-z (with L.Hesseholt).
18. *On Suslin's singular homology and cohomology*.
Documenta Math. Extra Volume: Andrei A. Suslin's Sixtieth Birthday (2010)
223–249
19. *On the relative and bi-relative algebraic K -theory of rings of finite characteristic*,
J. Amer. Math. Soc. 24 (2011), no. 1, 29–49, (with L.Hesselholt).

20. *On a conjecture of Vorst*,
Math. Zeitschrift 270, (2012) 445–452, (with L.Hesselholt)
21. *Duality for \mathbb{Z} -constructible sheaves for curves over finite fields*,
Doc. Math. 17 (2012), 989–1002.
22. *Homological descent for motivic homology theories*,
Homology, homotopy and applications, 16 (2014), No.2, 33–43.
23. *Albanese varieties, Suslin homology and Rojtman’s theorem*,
Algebraic number theory and related topics 2012, 73–83, RIMS Kokyuroku Bessatsu, B51, Res. Inst. Math. Sci., Kyoto, (2014).
24. *Rojtman’s theorem for normal schemes*,
Math. Res. Lett. 22 (2015), no. 4, 1129–1144.
25. *Applications and conjectures in motivic cohomology theory*
(Japanese), Sugaku 67 (2015), no. 3, 225–245.
26. *Parshin’s Conjecture and Motivic Cohomology with Compact Support*
Comment. Math. Univ. Sancti Pauli, Vol. 64, 2 (2015), 95–107.
27. *Tame class field theory for singular varieties over algebraically closed fields*,
Documenta Mathematica 21 (2016) 91–123 (with A. Schmidt).
28. *On the structure of étale motivic cohomology*,
Journal Pure Applied Algebra 221 (2017) 1614–1628, Volume in Honor of Chuck Weibel.
29. *Tame class field theory for singular varieties over finite fields*,
J. European Mathematical Soc. 19 (2017) 3467–3488 (with A. Schmidt).
30. *Poitou-Tate duality for arithmetic schemes*,
Compos. Math. 154 (2018), no. 9, 2020–2044 (with A.Schmidt)
31. *Hasse principles for étale motivic cohomology*,
Nagoya Math. J., 236, Celebrating the 60th Birthday of Shuji Saito (2019) , 63-83
32. *A Weil-étale version of the Birch and Swinnerton-Dyer formula over function fields*.
J. Number Theory 208 (2020), 367–389 (with T. Suzuki)
33. *Comparing the Brauer group to the Tate-Shafarevich group*.
J. Inst. Math. Jussieu 19 (2020), no. 3, 965–970. doi:10.1017/S1474748018000294
34. *Tate’s Conjecture and the Tate-Shafarevich group over global function fields*,
J. Inst. Math. Jussieu, 1-22. doi:10.1017/S147474801900046X

Preprints

35. *On the kernel of the Brauer-Manin pairing*. (with B. Morin)
36. *Special values of L-functions of one-motives over function fields*. (with T. Suzuki)

Refereed publications in conference proceedings

37. *Topological cyclic homology of schemes*,
Algebraic K-theory, Proc. Symp. Pure Math. 67 (1999), 41–88 (with L.Hesselholt)
38. *Applications of de Jong's theorem on alterations*,
Resolution of singularities (Obergrugl, 1997), 299–314, Progr. Math., 181, Birkhauser, Basel, 2000.
39. *Motivic cohomology, algebraic K-theory and topological cyclic homology*,
Handbook of K-theory. Vol. 1, 2, 193–234, Springer, Berlin, 2005.
40. *The cyclotomic trace map and values of zeta-functions*,
Algebra and number theory, 211–225, Hindustan Book Agency, Delhi, 2005.
41. *Parshin's conjecture revisited*,
K-theory and noncommutative geometry, 413–425, EMS Ser. Congr. Rep., Eur. Math. Soc., Zurich, 2008.
42. *Finite generation conjectures for motivic cohomology theories over finite fields*,
Regulators, 153–165, Contemp. Math., 571, Amer. Math. Soc., Providence, RI, 2012.
43. *Duality of integral étale motivic cohomology*,
K-Theory–Proceedings of the International Colloquium, Mumbai, 2016, 195–209, Hindustan Book Agency, New Delhi, 2018.
44. *Motivic cohomology: Applications and conjectures*,
Sugaku Expositions, Volume 32, Number 2, December 2019, 181–203.

Unrefereed publications

45. *A p -adic analogue of Beilinson's conjectures for Hecke characters*,
Schriftenreihe Math. Inst. Univ. Münster 14 (1995)
46. *Motivic Cohomology*,
RIMS proc. 1097 (1999), 95–99
47. *Algebraic K-theory of Henselian pairs*,
RIMS proc. 1154 (2000), 44–49
48. *Weil-étale cohomology and values of zeta functions*,
Conference Proceedings Waseda University (2002), 76–88
49. *Weil-étale cohomology*
(in Japanese), RIMS proc. 1376 (2004), 145–153