Curriculum Vita of David Hansen

September 10, 2017

Personal data

Date of birth: 3 March, 1988
U.S. Citizen

Employment

Columbia University, July 2014-present
Ritt Assistant Professor

Institut de Mathématiques de Jussieu, Sept. 2013-Aug. 2014
Postdoctoral Researcher

Education

Boston College, Ph.D. in Mathematics, May 2013
Thesis: *Overconvergent cohomology: theory and applications*
Advisor: Avner Ash

Brown University, B.A. in Mathematics with Honors, June 2010
Honors thesis: *Some new results in analytic number theory*

Papers and preprints

(available at http://www.math.columbia.edu/∼hansen)

1. *On p-adic L-functions for Hilbert modular forms*, with J. Bergdall, preprint
2. *Artin vanishing in rigid analytic geometry,* preprint
3. *Line bundles on rigid varieties and Hodge symmetry,* with S. Li, preprint
4. *Degenerating vector bundles in p-adic Hodge theory,* preprint
5. *Extensions of vector bundles on the Fargues-Fontaine curve* (arxiv:1705.00710), with C. Birkbeck, T. Feng, S. Hong, Q. Li, A. Wang and L. Ye, preprint
6. *Moduli of local shtukas and Harris's conjecture, I,* preprint

7. *Period morphisms and variations of p-adic Hodge structure,* preprint
8. *Quotients of adic spaces by finite groups,* to appear in *Math. Res. Letters*
9. *On the* GL_n*-eigenvariety and a conjecture of Venkatesh,* with J. Thorne, *Selecta Math.* Vol. 23 Issue 2, pp. 1205-1234
10. *Iwasawa theory of overconvergent modular forms, I: Critical-slope p-adic L-functions* (arxiv:1508.03982), preprint
11. *Overconvergent modular forms and perfectoid Shimura curves* (arxiv:1507.04875), with P. Chojecki and C. Johansson, D*ocumenta Math.* Vol. 22, pp. 191-262
12. *Universal eigenvarieties, trianguline Galois representations, and p-adic Langlands functoriality* (arxiv:1412.1533), *J. reine angew. Math.* Vol. 2017 Issue 730, pp. 1-64
13. *Minimal modularity lifting for* GL_2 *over an arbitrary number field* (arxiv:1209.5309), to appear in *Math. Res. Letters*
14. *Shimura lifts of half-integral weight modular forms arising from theta functions*, with Y. Naqvi. *The Ramanujan Journal* Vol. 17, No. 3.

Some papers in preparation:

1. *Sheafiness criteria for Huber rings,* with K. Kedlaya
2. *Completed and overconvergent cohomology,* with C. Johansson
3. *A primer on reflexive sheaves,* appendix to a preprint of T. Kaletha and J. Weinstein
4. *Title TBD,* with J. Weinstein

Awards and grants

- Junior Faculty Teaching Excellence Award, Columbia University Math Department, 2016
- Donald J. White Teaching Excellence Award, Boston College, 2012
- David Howell Premium for Excellence in Mathematics, Brown University, 2010
- Josephine de Kármán Foundation Fellow, 2009-2010
- Barry M. Goldwater Scholar, 2008-2010

Talks and events

Invited Talks In Seminars:

2017: Harvard, McGill (QVNTS), UMichigan*, Harvard/MIT Alg. Geom.*
2016: UCSC, Stanford, BU, Columbia, Northwestern, UChicago, BC, UCSD
2015: Cambridge, UNC, Brown, Columbia, Brandeis, Princeton/IAS, Harvard
2014: Columbia, ENS Lyon, King's College London, Oxford, Essen, BU, Johns Hopkins
Pre-2014: Queen's University, BC, Harvard, KU

Invited Talks At Conferences:

Summer school on modular forms, Padova, September 2017†
p-adic methods for Galois representations and modular forms, Barcelona, February 2017
Automorphic forms and arithmetic, AMS Special Session at the Joint Meetings, January 2017
Shimura varieties, representation theory, and related topics, Kyoto University, November 2016
Arithmetic geometry, Oberwolfach, August 2016
The p-adic Langlands program and related topics, Indiana University, May 2016
Southern California number theory day, UCSD, February 2016
Non-archimedean geometry and applications, Oberwolfach, December 2015
Analytic number theory and its applications, Thessaloniki, July 2014
p-adic variation in number theory, BU, June 2014
Atkin memorial conference, UIC, May 2014
Journee arithmetique a Villeteneuse, Paris 13, February 2014
L-functions and Galois representations, UCLA, May 2013

Other invited events:

p-adic cohomology and arithmetic applications, Banff, October 2017*
Arizona Winter School on perfectoid spaces, Tucson, March 2017
Arbeitsgemeinschaft on geometric Langlands, Oberwolfach, April 2016†

*Upcoming †Unable to attend due to personal or family illness

Teaching

At Columbia:

Fall 2017: Honors Math A (+1 independent reading course)
Spring 2017: Honors Math B (+1 independent reading course)
Fall 2016: Honors Math A; p-adic Hodge theory (+1 independent reading course)
Spring 2016: Number Theory and Cryptography (+3 independent reading courses)
Fall 2015: Calculus II; Intro to Higher Math (+1 independent reading course)
Spring 2015: Number Theory and Cryptography (+1 independent reading course)
Fall 2014: Two sections of Calculus I

At BC:

Fall 2011-Spring 2013: Four sections of Calculus I/II

Additional activities

- Co-organizer for the Student Number Theory Seminar at Columbia, Spring 2015-present. This is a learning seminar for graduate students focused on one important paper or topic each semester; we've covered Scholze's Berkeley course (Spring 2015), p-adic L-functions (Fall 2015), Caraiani-Scholze (Spring 2016), Kato's Euler system (Fall 2016), Faltings's proof of the Mordell conjecture (Spring 2017), and Hida theory (Fall 2017).

- Committee member for Columbia Ph.D. defense of Raju Krishnamoorthy (Advisor: Johan de Jong), April 2016
- Advisor for the senior honors thesis of Columbia undergraduate Thomas Alexander ("Sander") Mack-Crane, Spring 2015
- Advisor for an REU project at Columbia (students: Kevin Choi, David Hamann, Srikar Varadaraj, Xin Xu), Summer 2015
- Referee for Ann. Sci. Math. Quebec, Compositio Math., Inventiones Math., J. reine angew. Math., Ramanujan J.

References

- Avner Ash, Boston College (ashav@bc.edu)
- Johan de Jong, Columbia University (dejong@math.columbia.edu)
- Michael Harris, Columbia University (harris@math.columbia.edu)
- Barry Mazur, Harvard University (mazur@math.harvard.edu)
- Michael Thaddeus, Columbia University (mt324@columbia.edu) (teaching reference)
- Peter Scholze, Universität Bonn (scholze@math.uni-bonn.de)
- Glenn Stevens, Boston University (ghs@math.bu.edu)