Dr Wansu Kim

Curriculum Vitæ

Personal Data

Address:	Department of Mathematics King's College London Strand London, WC2R 2LS United Kingdom
Email:	wansu.kim@kcl.ac.uk
Webpage:	http://www.mth.kcl.ac.uk/~wansu/
Citizenship:	Korea (South)

Employment

- (10/2009–09/2011) **Imperial College London:** Chapman Fellowship.
- (10/2011–09/2014) **University of Cambridge:**
  Herchel Smith Postdoctoral Fellowship.
- (10/2014–12/2014) **University of Cambridge:**
  Departmental Postdoctoral Fellowship.
- (01/2015–present) **King's College London:** Research Associate.

Education

- **University of Michigan**, Ann Arbor, Michigan.
  Ph.D. in Mathematics, 09/2004 – 08/2009.
  Dissertation title: *Galois deformation theory for norm fields and its arithmetic applications.*
  Advisors: Brian Conrad.
- **Seoul National University**, Seoul, Korea.
  B. Sc. in Physics and (Dual) B. Sc. in Mathematics.
  03/1999 – 08/2002
- Note: the two-year gap between B.Sc. and Ph.D is due to the mendatory military service in South Korea (1 Aug, 2002 – 31 Aug, 2004).

Long-term visiting (during the Ph.D. program)

- (01/2007–05/2007) **Columbia University**
- (09/2008–06/2009) **Stanford University**

Research Interests

- (relative) p-adic Hodge theory and p-divisible groups
- Rapoport-Zink spaces and Shimura varieties, and their function field analogues.

Publications/Preprints

- Wansu Kim, *Galois deformation theory for norm fields and flat deformation rings*, (Journal of Number Theory (2011), Volume 131, Issue 7, July 2011, Pages 1258 – 1275)
- Wansu Kim, *The classification of p-divisible groups over 2-adic discrete valuation rings*, (Mathematical Research Letters (2012), Volume 19, Issue 01, Pages 121 – 141)
- Wansu Kim, *The classification of p-divisible groups over p-adic formally smooth rings*, (submitted; 60 pages; `arXiv:math/1201.0121`)
- Wansu Kim, *Rapoport-Zink spaces of Hodge type*, (preprint)
  `http://www.mth.kcl.ac.uk/~wansu/HodgeTypeRZ.pdf`
- Wansu Kim, *Rapoport-Zink uniformisation of Hodge-type Shimura varieties*, (preprint; 28 pages)
  `http://www.mth.kcl.ac.uk/~wansu/HodgeTypeRZUnif.pdf`

Work in Preparation

- Urs Hartl, Wansu Kim, *Local Shtukas, Hodge-Pink Structures and Galois Representations*,
  (In preparation)
- Wansu Kim, *Deforming 2-divisible groups*.
  To appear upon completion at `http://www.mth.kcl.ac.uk/~wansu`

Invited Talks

(13 Nov, 2014) **Exeter University**
Rapoport-Zink spaces of Hodge type and application to Shimura varieties.

(11 Feb, 2014) **University of Sheffield**
Rapoport-Zink spaces of Hodge type and application to Shimura varieties.

(13–16 Jan, 2014) **KIAS intensive lecture series on Shimura varieties and Rapoport-Zink spaces** at KIAS, (Seoul, Korea)
Rapoport-Zink spaces of Hodge type, and application to Shimura varieties (3 lectures).

(13 Nov, 2013) **University of Bielefeld**
Number Theory Seminar: Rapoport-Zink spaces of Hodge type.

(7 Nov, 2013) **University of Bonn**
Arbeitsgemeinschaft Arithmetische Geometrie: Rapoport-Zink spaces of Hodge type.

(22 – 26 Jul, 2013) **Pan-Asian Number Theory 2013** at VIASM (Hanoi, Vietnam)
Rapoport-Zink spaces of Hodge type, and application to Shimura varieties.

(22 – 26 Apr, 2013) **p-adic Galois representations and p-adic Hodge theory: theoretical and effective aspects** at CIRM (Luminy, France)
Rapoport-Zink spaces of Hodge type, and application to Shimura varieties.

(31 May, 2012) **University of Rennes 1**
Number Theory Seminar: The relative Breuil-Kisin classification of p-divisible groups.

(22 Nov, 2011) **University of Cambridge**
Number Theory Seminar: The relative Breuil-Kisin classification of p-divisible groups.

(21 Dec, 2010) **University of Bielefeld**
Number Theory Seminar: Galois Deformation Theory for Norm Fields.

(15 Dec, 2010) **London Number Theory Seminar** at Imperial College London
The classification of p-divisible groups over p-adic discrete valuation rings.

(9 Sep, 2010) **Kyushu University**
Algebra seminar: The classification of p-divisible groups over p-adic discrete valuation rings.

(24 Feb, 2010) **London Number Theory Seminar** at University College London
Galois Deformation Theory for Norm Fields.

(27 Sep – 02 Oct, 2009) **t-motives: Hodge structures, transcendence and other motivic aspects** at BIRS (Banff, Canada)
Equi-Characteristic Analogue of Crystalline Deformation Rings.

(24 Sep, 2009) **Québec-Vermont Number Theory Seminar** at Concordia University
Galois Deformation Theory for Norm Fields.

(27 Aug, 2009) **Korea Institute for Advanced Study** (Seoul, South Korea)
Equi-Characteristic Analogue of Crystalline Deformation Rings.

(27 Aug, 2009) **Korea Institute for Advanced Study** (Seoul, South Korea)
Galois Deformation Theory for Norm Fields.

(23 Mar, 2009) **Boston University**
Algebra Seminar: *Galois Deformation Theory for Norm Fields.*

(25 Feb, 2009) **University of California, Berkeley**
Number Theory Seminar: *Galois Deformation Theory for Norm Fields.*

(30 Jan, 2009) **Stanford University**
Number Theory Seminar: *Galois Deformation Theory for Norm Fields.*

Mini Lectures

(19 – 30 July, 2010) **Instructional Conference: Congruences of Modular forms and Galois representations** at POSTECH, Pohang, South Korea
Mini lectures on classical theory of modular forms and Katz' theory of p-adic modular forms, etc. aimed mostly at Ph.D. students.

(27 March – 20 April, 2012) **PNTAG Lecture Series: A short course on p-adic modular forms and Lubin-Tate spaces**
at POSTECH, Pohang, South Korea
aimed mostly at Ph.D. students.

Professional Service

- Referee for the following peer-review journals: *Proceedings of the London Mathematical Society, Mathematical Research Letters, International Mathematics Research Notices, Algebra and Number Theory, Duke Mathematical Journal, Manuscripta Mathematica, Journal of Number Theory*

Teaching Experience

- **Course Assistant** in Math 19: Single-variable calculus.
  Autumn quarter, 2008, Stanford University:
  Responsible for holding office hours and exam grading.
- **Independent Instructor** in Math 115: Calculus I.
  Fall semester, 2006, University of Michigan:
  Teaching own section, responsible for approximately 30 students.
- **Teaching Assistant** in Math 215: Multi-variable calculus.
  Winter semester, 2006, University of Michigan:
  Responsible for teaching recitation sessions, holding office hours, and grading exams/homework for approximately 100 students in total.
- **Independent Instructor** in Math 105: Pre-calculus.
  Fall semester, 2005, University of Michigan:
  Teaching own section, responsible for approximately 30 students.
- **Teaching Assistant** in Math 215: Multi-variable calculus.
  Fall semester, 2004, University of Michigan:
  Responsible for teaching recitation sessions, holding office hours, and grading exams/homework for approximately 100 students in total.
- **Assistant Teacher** in Michigan Math and Science Scholars program.
  29 Jun–11 Jul, 2008, University of Michigan:
  Taught high school students with Marty Weissman (Prime instructor) and Dan Hermes (Assistant Teacher).
  Topic: *Quadratic Forms: from Gauss to Conway.*
- **Independent Instructor** Error-Correcting Codes (via Finite Fields).
  Spring term in 2010 and 2011, Imperial College London.
  M.Sc. level Course, jointly offered by Departments of Mathematics and Electrical and Electronic Engineering. Wrote (and graded) the final exams.

- **Independent Instructor** p-adic Hodge Theory.
  Michaelmas term (October – December, 2011), University of Cambridge
  Non-examinable graduate course for PhD research students.
- **Independent Instructor** Topics in Number Theory: Affine Deligne-Lusztig Varieties.
  Michaelmas term (October – December, 2014), University of Cambridge
  Non-examinable graduate course for PhD research students.