

# Riccardo Brasca

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## Contact Information

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## Work Experience

### Maître de conférences (associate professor)

September 2013 - present

Université de Paris

Institut de Mathématiques de Jussieu-Paris Rive Gauche

### Post-Doc

October 2012 - August 2013

École Normale Supérieure de Lyon

### Post-Doc

April 2012 - September 2012

Max Planck Institute for Mathematics, Bonn

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## Publications and preprints

- $p$ -adic powers of the Gauss–Manin connection for Siegel modular forms. Joint work with [Giovanni Rosso](#). In preparation.
- $p$ -adic families of modular forms for Hodge type Shimura varieties. Submitted for publication.
- Overconvergent Eichler–Shimura isomorphisms for certain unitary groups. Joint work with [Daniel Barrera Salazar](#). In preparation.
- Hida theory over some unitary Shimura varieties without ordinary locus. Joint work with [Giovanni Rosso](#). [arXiv:1711.05546](https://arxiv.org/abs/1711.05546). To appear in *American Journal of Mathematics*.
- Eigenvarieties for non-cuspidal modular forms over certain PEL Shimura varieties. Joint work with [Giovanni Rosso](#). [arXiv:1605.05065](https://arxiv.org/abs/1605.05065). Submitted for publication.
- An Introduction to Perfectoid Spaces. Joint work with [Fabrizio Andreatta](#), [Olivier Brinon](#), [Bruno Chiarellotto](#), [Nicola Mazzari](#), Simone Panozzo, and [Marco Seveso](#). *Panorama et Synthèses*, no. 54, 2019.
- Eigenvarieties for cuspforms over PEL type Shimura varieties with dense ordinary locus. *Canadian Journal of Mathematics* 68 (2016), no.6, 1227-1256. [doi.org/10.4153/CJM-2015-052-2](https://doi.org/10.4153/CJM-2015-052-2).
- Quaternionic modular forms of any weight. *Int. J. Number Theory* 10 (2014), no. 31, 31-53. [doi:10.1142/S1793042113500796](https://doi.org/10.1142/S1793042113500796).

- $p$ -adic modular forms of non-integral weight over Shimura curves. *Compos. Math.* 149 (2012), no. 1, 32–62. [doi:10.1112/S0010437X12000449](https://doi.org/10.1112/S0010437X12000449).

## Scientific activities

- Member of the ANR project COLOSS 2020 - 2024
- Member of the ANR project PerCoLaTor 2015 - 2019
- Organizer of the seminar *Groupes Réductifs et Formes Automorphes*, Institute de Mathématiques de Jussieu-Paris Rive Gauche September 2014 - June 2016
- Organizer of the conference *Solstice 2014*, Université Paris 7 June 2014
- Referee for the *Canadian Journal of Mathematics*, *International Journal of Number Theory*, and *Algebra & Number Theory*
- Reviewer for MathSciNet
- Organizer of the workshop *Almost Xmas seminar*, Università degli Studi di Milano, Milan December 2011

## Seminars and Talks

- $p$ -adic families of modular forms over Shimura varieties of Hodge type January 2020  
Workshop *Jornada de Teoría de Números y Representaciones*  
Universidad de Santiago de Chile
- $p$ -adic families of modular forms over Shimura varieties of Hodge type May 2019  
Conference  *$p$ -adic modular forms and  $p$ -adic L-functions*  
Fondazione Alessandro Volta, Como - Italy
- Hida theory over some Shimura varieties without ordinary locus April 2019  
*Fourth one-day workshop in Cardedeu:  $p$ -adic arithmetic geometry*  
Universitat de Barcelona - Spain
- Mini-course Katz  $p$ -adic modular forms September 2017  
*Summer School on Modular Forms*  
Università di Padova - Italy
- Eigenvarieties for non-cuspidal Siegel modular forms September 2017  
*Summer School on Modular Forms*  
Università di Padova - Italy
- Eigenvarieties for non-cuspidal Siegel modular forms February 2017  
Conference  *$p$ -adic methods for Galois representations and modular forms*  
Universitat de Barcelona - Spain
- Hida theory over some Shimura varieties without ordinary locus May 2016  
*Number Theory Seminar*  
Cambridge University - UK
- Hida theory over some Shimura varieties without ordinary locus April 2016  
*Arithmetic and Algebraic Geometry Seminar*  
University of Amsterdam - The Netherlands
- Eigenvarieties for non-cuspidal Siegel modular forms March 2016  
*Québec-Vermont Number Theory Seminar*  
McGill University - Montreal, Canada
- Variété de Hecke pour formes de Siegel non cuspidales October 2015  
*Séminaire d'Arithmétique*  
Université de Lille - France

- Famiglie  $p$ -adiche di forme modulari non cuspidali  
*Conference of the UMI, the Italian Mathematical Society*  
 University of Siena - Italy  
 September 2015
- Almost mathematics  
*Summer school Perfectoid spaces*  
 Organized by the University of Padova - Brixen, Italy  
 September 2015
- Eigenvarieties for non-cuspidal Siegel modular forms  
*Conference Journées arithmétiques à Lyon*  
 ENS-Lyon - France  
 June 2015
- About the notion of  $p$ -adic family of modular forms  
*Seminar Number Theory and Algebraic Geometry*  
 KU Leuven - Belgium  
 April 2015
- Hida theory over some Shimura varieties without ordinary locus  
*Number Theory Seminar at Johns Hopkins University*  
 Johns Hopkins University - Baltimore, USA  
 March 2015
- Hida theory over some Shimura varieties without ordinary locus  
*Seminar Automorphic Forms and Arithmetic*  
 Columbia University - New York City, USA  
 December 2014
- Théorie de Hida pour certaines variétés de Shimura sans lieu ordinaire  
*Séminaire de théorie des nombres de l'IMJ-PRG*  
 Institut de Mathématiques de Jussieu-Paris Rive Gauche - France  
 November 2014
- Hida theory over Shimura varieties without ordinary locus  
*Conference  $p$ -adic methods in number theory*  
 Università degli Studi di Milano - Italy  
 October 2014
- Families of overconvergent modular forms over Shimura varieties without ordinary locus  
*Conference  $p$ -adic aspects of modular forms*  
 IISER - Pune, India  
 June 2014
- Familles des formes modulaires  $p$ -adiques et variétés de Hecke  
*Séminaire MathJeunes*  
 ENS Ulm - Paris, France  
 January 2014
- Autour d'une construction géométrique des variétés de Hecke  
*Séminaire groupes réductifs et formes automorphes*  
 Institut de Mathématiques de Jussieu-Paris Rive Gauche - France  
 October 2013
- About a geometric construction of eigenvarieties for Shimura variety of PEL type  
*Summer number theory in Milan*  
 Università degli Studi di Milano - Italy  
 June 2013
- Variétés de Hecke pour certaines formes modulaires de type PEL  
*Séminaire de théorie des nombres de Caen*  
 Université de Caen Basse-Normandie - France  
 January 2013
- Hecke varieties for Shimura varieties with ordinary locus  
*Conference Variétés de Shimura et formes modulaires  $p$ -adiques*  
 Université Paris 13 - France  
 January 2013
- Strict  $\mathcal{O}$ -modules and  $p$ -adic modular forms  
*Oberseminar*  
 University of Zürich - Switzerland  
 December 2012
- Strict  $\mathcal{O}$ -modules and  $p$ -adic modular forms  
*Séminaire de théorie des nombres*  
 Institut de Mathématiques de Bordeaux - France  
 November 2012

- $p$ -adic modular forms of non-integral weight over Shimura curves May 2012  
*London number theory seminar*  
 Kings College - London, UK
  - $p$ -adic modular forms of non-integral weight over Shimura curves May 2012  
*Oberseminar*  
 Max Planck Institute for Mathematics - Bonn, Germany
  - $p$ -adic modular forms of non-integral weight May 2012  
*Workshop Algebraic Geometry and related topics*  
 Centro di Ricerca Matematica Ennio De Giorgi - Pisa, Italy
  - Perfectoid fields and algebras December 2011  
*Almost Xmas Seminar*  
 Università degli Studi di Milano - Italy
  - $p$ -adic modular forms of non-integral weight December 2011  
*Christmas Seminar*  
 Università degli Studi di Milano - Italy
  - $p$ -adic modular forms of non-integral weight over Shimura curves June 2010  
*Seminario di teoria dei numeri*  
 Università degli Studi di Milano - Italy
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## Education

- Ph.D. in Mathematics** March 2012  
 Università degli Studi di Milano  
 Thesis:  $p$ -adic families of modular forms over Shimura curves  
 Advisor: [Fabrizio Andreatta](#)
  - M.Sc. in Mathematics** July 2008  
 Università degli Studi di Milano  
 Thesis: Galois cohomology via almost-étale extensions  
 Advisor: [Fabrizio Andreatta](#)
  - B.Sc. in Mathematics** July 2006  
 Università degli Studi di Milano  
 Spazi di Banach e propriet`a di Radon-Nikodym  
 Advisor: [Clemente Zanco](#)
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## Teaching Experience

- Université de Paris**
  - Teaching various courses as maître de conférences September 2013 - present
- Università degli Studi di Milano, Italy**
  - Teaching assistant, Calculus III course November 2008 - February 2009
  - Teaching assistant, Algebra II course March 2011 - July 2011