

PERSONAL INFORMATION Fabrizio Andreatta

POSITION Full Professor

WORK EXPERIENCE 01/07/2015 - present: Full professor at the Department of Mathematics of the State University of Milano.

02/11/2006 - 30/06/2015: Associate Professor at the Department of Mathematics of the State University of Milano.

01/12/2002 - 31/10/2006: Assistant Professor at the Department of Pure and Applied Mathematics of the University of Padova.

April 2002 - November 2002: PostDoc at the University of Rome "La Sapienza".

March 2001 - April 2002: PostDoc at the University of Padova.

01/09/2002 - 28/02/2001: PostDoc at McGill University (Montreal, Ca).

EDUCATION AND TRAINING

19/06/2000: PhD in Mathematics on a TMR scholarship of the European Community, obtained at the University of Utrecht

20/07/1995: Master in Mathematics cum laude at the University of Trento (IT) under the supervision of Prof.~Eduardo Ballico and Prof.~Rene' Schoof.

Languages(s) Italian (mother tongue), English

Personal information

I authorize the handling of personal information in this curriculum, according to D.Lgs n. 196/03 and following modifications and Regulations EU 679/2016 (General Regulations concerning Data Protection or GRDP) and art. 7 of University Regulations concerning protection of personal information.

I authorize, according to D.lgs 14/03/2013 n. 33 concerning transparency, in case of conferment of the position and of the fellowship, the publication of this curriculum in the web site of Università degli Studi di Milano in the section "Amministrazione trasparente", "Consulenti e collaboratori".

Date

31/12/2019

Signature



## 1 Some visiting positions

- February 2018, Simons CRM chair at the CRM (Montreal, Canada);
- October 2007 and 2008: University of Rennes (France);
- June 2004: University of Bonn;
- February 2002: University of Paris XIII;
- January - April 2000: MIT (Cambridge, MA);

## 2 Institutional responsibilities

- 2007 - present: Member of the PhD Committee of the Department of Mathematics of Milano.
- 2007 - present: Organizer of the Internal Seminar “Arithmetic geometry, Motives and Number theory” at the Department of Mathematics of Milano
- 2010 - present: Local Responsible for Milano of the AIGaNT-Doc program involving the universities of Bordeaux, Chennai, Leiden, Milano, Concordia, Padova, Orsay and Stellenbosch.
- 2017 - present: Associate editor of the *Canadian Journal of Mathematics* and of the *Canadian Mathematical Bulletin*.

## 3 Supervision of PhD students and PostDocs

- Riccardo Brasca, *p-adic modular forms of non-integral weight over Shimura curves* (2012). Brasca is currently maître de conf in Paris VII.
- Chao Zhang, cosupervised with bas Edixhoven (Leiden), *G-zips and Ekedahl-Oort strata for Hodge type Shimura varieties* (2013). Zhang is currently PostDoc in Tsinghua university (Beijing).
- Krzysztof Dorbisz, cosupervised with Bart de Smit (Leiden), *Inverse problems for universal deformation rings of group representations* (2015).
- Francesca Bergamaschi, cosupervised with Eyal Goren (McGill), *Bad reduction of Hilbert modular varieties with parahoric level structure* (2017).
- Qijun Yan, cosupervised with Bart de Smit (Leiden), *Adapted deformations and Ekedahl-Oort stratifications of Shimura varieties* (2017)

I am currently supervising the PhD students Maxim Mornev (expected 2018), Simone Panozzo (expected 2019) and the PostDoc Jeffrey Yelton (2015-2018).

## 4 Major collaborations

My own education – first in Italy, then in the Netherlands, in France and in Canada – is international. I regularly visit several departments of mathematics in Europe and outside: Concordia University and McGill University (Montreal), University of Bordeaux, University of Paris 13, ENS in Lyon.

Concerning the theme of adic modular forms I have been collaborating intensively with Olivier Brinon (University of Bordeaux), with Adrian Iovita (Concordia University, Montreal), with Glenn Stevens (Boston University) and with Vincent Pilloni (ENS Lyon).

Concerning my interests in Kudla program I have been working with Eyal Goren (McGill University, Montreal), with Ben Howard (Boston College) and with Keerthi Madapusi Pera (University of Chicago).

## 5 Organization of some scientific meetings

- Summer school and workshop on “ $p$ -adic modular forms” in Padua (IT) from August 28th to September 6th 2017.
- Summer school on “Perfectoid spaces” in Bressanone (IT) from August 31st to September 4th 2015.
- Scientific organizer of the Number Theory session in the UMI meeting in Siena, September 2015.
- Conference on “Arithmetic geometry of orthogonal and unitary Shimura varieties” at the Banff conference centre (CA) from June 3rd to June 8th 2012.
- Oberwolfach Seminar “Finite Group Schemes and  $p$ -divisible Groups” in Oberwolfach (GE) from May 15th to May 21st 2005.

## 6 Teaching experiences

- Graduate courses on Riemannian Symmetric Spaces (McGill, 2000), Fontaine’s theory (Milano, 2009), Shimura varieties (Milano, 2010), Perfectoid spaces and applications (Milano 2014-2015);
- Undergraduate courses on Algebraic Geometry (Milano, for five academic years, 2006-2011);
- Undergraduate course on Galois Theory and Number Theory (Milano, since 2009);
- Undergraduate course on Point Set Topology (Milano, 2011-2015);
- Linear Algebra for first year students in Physics (Milano, for four academic years, 2006-2010).

## 7 Selection of publications, last 10 years

1. F. Andreatta, A. Iovita, V. Pilloni: *Le halo spectrale*. To appear in the Ann. Sci. ENS.
2. F. Andreatta, E. Goren, B. Howard, K. Madapusi Pera: *Faltings heights of abelian varieties with complex multiplication*, Annals of Mathematics **188** (2018), 391-531.
3. F. Andreatta, E. Goren, B. Howard, K. Madapusi Pera: *Height pairings on orthogonal Shimura varieties*. Compositio Math. **153** (2017), 474–534.
4. F. Andreatta, L. Barbieri Viale, A. Bertapelle: *Ogus realization of 1-motives*, Journal of Algebra **487** (2017), 294–316.
5. F. Andreatta, A. Iovita, V. Pilloni: *On overconvergent Hilbert cusp forms*. Astérisque **382** (2016), 163–193.
6. F. Andreatta, C. Gasbarri: *Deformation of torsors under monogenic group schemes*. Journal de Théorie des Nombres de Bordeaux **28** (2016), 125-143.
7. F. Andreatta, A. Iovita, V. Pilloni:  *$p$ -Adic families of Siegel modular cuspforms*, Annals of Mathematics **181** (2015), 623–697.
8. F. Andreatta, A. Iovita, M. Kim: *A  $p$ -adic non-abelian criterion for good reduction of curves*, Duke Math. Journal **164** (2015), 2597–2642.
9. F. Andreatta, A. Iovita, G. Stevens: *Overconvergent Eichler-Shimura isomorphisms*, Journal de l’Institut de Mathématiques de Jussieu **14** (2015), 221-274.

10. F. Andreatta, A. Iovita, G. Stevens: *Overconvergent modular sheaves and modular forms for  $GL_2/F$* , Israel Journal of Mathematics **201** (2014), 299–359.
11. F. Andreatta, O. Brinon: *Acyclicité géométrique de  $B_{\text{cris}}$* , Commentarii Mathematici Helvetici **88** (2013), 965–1022.
12. F. Andreatta, A. Iovita: *Comparison Isomorphisms for Smooth Formal Schemes*, Journal de l’Institut de Mathématiques de Jussieu **12** (2013), 77–151.
13. F. Andreatta, O. Brinon:  *$B_{\text{dR}}$ -représentations dans le cas relatif*, Ann. Scient. Éc. Norm. Sup. **43** (2010), 279–339.
14. F. Andreatta, A. Iovita: *Global applications of relative  $(\varphi, \Gamma)$ -modules I*, Astérisque **319** (2008), 339–420.
15. F. Andreatta, O. Brinon: *Surconvergence des représentations  $p$ -adiques : le cas relatif*, Astérisque **319** (2008), 39–116.

## 8 Selected list of invited presentations at international conferences since 2007

- Invited to the **International Congress of Mathematicians 2018**, Number Theory section;
- Oberwolfach meeting “Algebraische Zahlentheorie”, June 2017;
- invited to give a mincourse at the “Ecole d’été à l’Institut Fourier” (Grenoble, FR) in June 2017;
- mincourse at the ETH summer school “Shimura varieties and complex multiplication”, August 2016, Ascona (SW);
- Oberwolfach meeting “Arithmetic Geometry”, August 2016;
- “Fundamental Groups in Arithmetic Geometry”, May 2016, IHP (Paris);
- “Recent developments in integral  $p$ -adic Hodge theories”, February 2016, HCM (Bonn);
- Séminaire Arithmétique et Géométrie Algébrique, February 2016, Orsay;
- London-Paris Number Theory seminar, November 2015 (Paris 13);
- Séminaire de Géométrie Arithmétique Paris-Pékin-Tokyo, October 2014, IHES;
- ICM satellite conference “Automorphic forms and Arithmetic”, August 2014, Postech (Korea);
- Oberwolfach meeting “Algebraische Zahlentheorie”, July 2014;
- “ $p$ -adic Variation in Number Theory”, a conference in Honor of Glenn Stevens’ 60th Birthday, June 2014, Boston University;
- “Arithmetic intersection theory and Shimura varieties”, February 2014, HIM (Bonn);
- “Variétés de Shimura et Formes modulaires  $p$ -adiques”, January 2013, Paris XIII;
- “ $p$ -adic Simpson correspondence”, September 2012, Mainz;

- “Théorie de Hodge  $p$ -adique et Développements”, January 2012, IHES;
- Meeting of the Italian Mathematical Union, September 2011, Bologna;
- ICM satellite conference “Automorphic forms and number theory”, August 2010, Goa (India);
- “Galois Trimester”, February 2010, IHP (Paris);
- Clay Mathematics Institute Summer School on “Galois Representations” (four lectures), July 2009, University of Hawaii;
- Oberwolfach meeting “Algebraische Zahlentheorie”, June 2009;
- “Cohomology of period domains and related moduli spaces”, September 2007, MPI (Bonn);

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