



# Arno Kret

## Curriculum Vitae

### Experience

- Aug 2015–present Assistant Professor, *University of Amsterdam*
- Sept 2015–Oct 2015 Professeur Invité, *Ecole Polytechnique*, Paris
- Jan 2015–Aug 2015 Post-Doc, *Max-Planck-Institut für Mathematik*, Bonn
- Aug 2014–Dec 2014 Post-Doc, *Mathematical Sciences Research Institute*, Berkeley
- Sept 2013–July 2014 Member, *Institute for Advanced Study*, Princeton
- Sept 2009–Sept 2013 Phd Student, *Université Paris-Sud 11*, Orsay

### Education

- June 2013 **PhD mathematics**, Université Paris-Sud 11, Orsay, *Mention Très Honorable*.
- Sept 2009 **MSc mathematics**, Leiden University, Leiden, *Cum Laude*.
- Sept 2009 **MSc mathematics**, Université Paris-Sud 11, Orsay, *Mention Très Bien*.
- Sept 2007 **BSc mathematics**, Leiden University, Leiden, *Cum Laude*.

### PhD Thesis

- Title *Stratification de Newton des variétés de Shimura et la formule des traces d'Arthur-Selberg*
- Supervisors Laurent Clozel and Laurent Fargues
- Rapporteurs Sug Woo Shin and Henri Carayol
- Jury Henri Carayol (President), Laurent Clozel, Laurent Fargues, Michael Harris, Guy Henniart and Emmanuel Ullmo
- Mention Très honorable
- Date June 2013

### Research Grants

- July 2016 VENI grant (250k€), the Dutch organisation for scientific research (N.W.O.), 2017-2020

### Awards

- Sept. 2009 MSc Mathematics *Leiden University*, Cum Laude
- Sept. 2009 MSc Mathematics *Université Paris-Sud*, Mention Très Bien
- Sept. 2007 BSc Mathematics *Leiden University*, Cum Laude

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## Publications

- 2016 Galois generic points on Shimura varieties (with Anna Cadoret), *Algebra and Number theory*  
2015 Combinatorics of the basic stratum, *Documenta Mathematica*  
2014 Equidistribution in supersingular Hecke orbits, *Journal für die Reine und Angewandte Mathematik*  
2013 The basic stratum of some simple Shimura varieties, *Math. Ann.* 356 (2013), no. 2, 487–518  
2012 Jacquet modules of Ladder representations (with Erez Lapid), *C. R. Math. Acad. Sci. Paris* 350 (2012), no. 21-22, 937–940

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## Preprints

- Galois representations for the general symplectic group (with Sug Woo Shin), submitted
- The trace formula and the existence of Newton strata modulo  $p$ , submitted
- Existence of cuspidal representations of  $p$ -adic reductive groups
- Integral points on Hilbert-Blumenthal varieties (with Rafael von Känel), in preparation

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## International visits

- Sept 2015 Professeur invité, *Ecole Polytechnique*, Paris. Invited by Anna Cadoret.  
July 2015 Guest researcher, *Korea Institute for Advanced Study*, Seoul. Invited by Sug Woo Shin.  
May 2015 *University of Berkeley*. Invited by Sug Woo Shin  
March 2015 *University of Berkeley*. Invited by Sug Woo Shin  
March 2014 *Massachusetts Institute of Technology*. Invited by Sug Woo Shin  
June 2011 *Universtiy of Jerusalem*. Invited by Erez Lapid.

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## Talks

- Feb 2017 *Université d'Aix-Marseille*: Représentations Galoisiennes pour GSp  
Nov 2016 *Workshop on Shimura varieties, representation theory and related topics, Kyoto, Japan*: Galois representations for the general symplectic group  
Oct 2016 *University of Leiden*: Galois representations for the general symplectic group  
Sept 2016 *University of Leuven*: Wiles' modularity theorem  
Oct 2015 *Intercity Number Theory Seminar*: Galois representations for the general symplectic group  
Oct 2015 *Geometry and Quantum Theory Colloquium*: Conjectural connections between automorphic representations and Galois representations  
Oct 2015 *Seminaire Chevalley Université Paris 6/7*: Représentations Galoisiennes pour GSp  
Oct 2015 *Ecole Polytechnique*: Conjecture de Langlands. (Series of two lectures on the Langlands conjectures for the non-expert)  
Sep 2015 *Université Paris 13*: Représentations Galoisiennes pour GSp  
Sep 2015 *General Mathematics Colloquium, University of Amsterdam*: Integral points on Hilbert-Blumenthal Varieties (joint work with Rafael von Känel)  
May 2015 *University of Bielefeld*: Galois representations for the general symplectic group  
Jun 2015 *University of Mainz*: Galois representations for the general symplectic group  
Jun 2015 *Korea Institute for Advanced Study*: Galois representations for the general symplectic group  
Mar 2014 *Max-Planck-Institute für Mathematik, Postdoc seminar*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula  
Mar 2014 *University of Leiden*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula  
Mar 2014 *Mathematical Sciences Research Institute, Berkeley*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula  
Mar 2014 *Universtiy of Maryland*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula

- Mar 2014 *Massachusetts Institute of Technology*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Feb 2014 *Princeton graduate student seminar*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Sep 2013 *Institute for Advanced Study, postdoc seminar*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Mar 2013 *University Duisenberg-Essen*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Mar 2013 *Seminaire mathjeunes, École normale supérieure de Paris*: Equidistribution in the supersingular locus of the modular curve
- Mar 2013 *University of Paderborn*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Mar 2013 *Universität of Paderborn*: The Langlands-Kottwitz method for the supersingular locus of the modular curve
- Feb 2013 *Université de Bordeaux*: La stratification de Newton des variétés de Shimura et la formule des traces d'Arthur-Selberg
- Feb 2013 *University of Copenhagen*: The Newton stratification of Shimura varieties and the Arthur-Selberg trace formula
- Feb 2013 *Université Paris 6 et 7*: La stratification de Newton des variétés de Shimura et la formule des traces d'Arthur-Selberg
- Dec 2012 *Université Paris 11*: La stratification de Newton des variétés de Shimura et la formule des traces d'Arthur-Selberg
- Jun 2012 *University of Tel Aviv*: The supersingular locus of the modular curve
- Jun 2012 *University of Jerusalem*: The basic stratum of some simple Shimura varieties
- Mar 2012 *Seminaire REGA, Paris*: Strate basique d'une courbe de Shimura
- Jan 2012 *Algebra, Geometry and number theory seminar, Leiden*: The basic stratum of a simple Shimura curve
- Jun 2011 *Seminar on Motives, Université Paris 11*: The point counting formula of Kottwitz for the modular curve
- Jun 2011 *Seminaire Math Jeunes, Université Paris 11*: The lambda-adic representations associated to some simple Shimura varieties
- Mar 2010 *Seminaire Math Jeunes, Université Paris 11*: A Lefschetz Trace Formula for Certain Shimura Varieties
- Jan 2010 *Seminaire Math Jeunes, Université Paris 11*: The Fundamental Group of Abelian Varieties
- Oct 2009 *Seminaire Math Jeunes, Université Paris 11*: Modular forms and automorphic forms, Series of 3 talks
- Jun 2009 *University of Leiden*: Galois Representations, Defence of my master's thesis
- Mar 2009 *Seminaire Math Jeunes, Université Paris 11*: The Global Langlands Conjecture, 2 talks
- Dec 2008 *Seminar Adelic Methods, University of Leiden*: The Global Langlands Conjecture, 2 talks
- Nov 2008 *Seminar Adelic Methods, University of Leiden*: Local Class Field Theory
- May 2007 *Bachelor's Seminar, University of Leiden*: Categories with a Group Action
- Feb 2007 *Bachelor's Seminar, University of Leiden*: Tensor products
- Jan 2007 *Bachelor's Seminar, University of Leiden*: The ABC-conjecture for finite fields
- Nov 2005 *Seminar Leren presenteren en communiceren, University of Leiden*: Equivalence of  $\mathbf{R}$  and  $\mathbf{R}$

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## Teaching Experience

- 2016-2017 'Galois theorie', University of Amsterdam
- 2016-2017 'Wiskunde 1C' (linear algebra for physics), University of Amsterdam
- 2016-2017 'Wiskunde 1B', (calculus and linear algebra for physics), University of Amsterdam
- 2016-2017 'Galois representations and automorphic forms', national MasterMath course
- 2015-2016 'Wiskunde 1C' (linear algebra for physics), University of Amsterdam

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- 2015-2016 ‘Wiskunde 1B’, (calculus and linear algebra for physics), University of Amsterdam  
2011-2013 Mathematics 1 for Biology students at Université Paris-Sud as teaching assistant  
spring 2008 Topology at Leiden University as teaching assistant  
fall 2007 Analyse 3, differential equations, at Leiden University as teaching assistant

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## Bachelor Students

Lennart van Lierop (in progress)  
Ugur Taytas (in progress)

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## Master Students

Philip van Reeuwijk, masters (in progress)  
Sept 2016 David van Overeem, masters

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## Other Education Experience

- 2016 Member of PhD-committee of Christophe Debry  
2015 Member of PhD-committee of Yongqi Feng  
2011 Member of reading committee for Master student Weidong Zhuang

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## Languages

Dutch **Mothertongue**  
English **Fluent**  
French **Fluent**

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## References

Laurent Clozel  
Laurent Fargues  
Guy Henniart  
Sug Woo Shin