

Xu SHEN  
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## CURRICULUM VITAE OF XU SHEN

### Personal Information

Surname: SHEN  
Name: Xu  
Birth: 09 November 1984, Nanyang, China  
Nationality: Chinese

### Employment

- Associate professor, 09/2015-, Morningside Center of Mathematics & Institute of Mathematics, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China
- Postdoc, 09/2014-08/2015, Universität Regensburg, Regensburg, Germany
- Postdoc, 09/2013-08/2014, Universität Bonn, Bonn, Germany
- ATER(demi)-Teaching assistant, 10/2012-08/2013, Université Paris-Sud 11, Orsay, France

### Diplomas

- Ph.D in Arithmetic and Algebraic Geometry, 09/2009-12/2012  
Université Paris-Sud 11, Orsay, France
- Master in pure mathematics, 09/2007-07/2009  
Padova University and Université Paris-Sud 11 (ALGANT program), Italy and France
- Master in pure mathematics, 09/2006-08/2007  
Institute of Mathematics, Chinese Academy of Sciences, Beijing, China
- Bachelor of Sciences, 09/2002-06/2006  
Wuhan University, Wuhan, China

### Financial supports, Scholarships, and Distinctions

- The Recruitment Program of Global Experts (The Thousand Talents Plan Program for Young Talents), 2017, China
- Key Research Program of Natural Science Foundation of China: Study of Chow groups, K-groups and invariants of algebraic varieties over number fields, NSFC grant No. 11631009 (with Fei Xu, Shun Tang, Hourong Qin, Xuejun Guo, Dasheng Wei), 2017-2021
- The Hundred Talents Program (type C) of CAS, 2016-2018, China
- President Fund of Academy of Mathematics and Systems Science, CAS, 2015-2018, China
- SFB/TR 45 “Periods, Moduli Spaces and Arithmetic of Algebraic Varieties” and SFB 1085 “Higher Invariants” of the DFG (Postdoctoral research fellowship), 2013-2015, Bonn and Regensburg, Germany
- Prix de thèse Fondation Mathématique Jacques Hadamard, 2013, Université Paris-Sud 11, Orsay, France

- Allocation de Recherche (Research Fellowship), 2009-2012, Université Paris-Sud 11, Orsay, France
- ALGANT scholarship of Erasmus Program, 2007-2009, Padova University and Université Paris-Sud 11, Italy and France
- Scholarship People, 2003-2005, Wuhan University, China
- Scholarship Pure Mathematics, 2004-2005, Wuhan University, China

### Languages

English, French, Chinese

### Teaching

- Introduction to Shimura varieties, Spring Semester 2016, AMSS, Beijing
- The Local Langlands Correspondence for  $GL_n$  over  $p$ -adic fields, Fall/Winter Semester 2015-2016, BICMR /AMSS, Beijing
- Math203-Exercise section of Analysis and convergence II, Math.-Info. Undergraduate 2, 2012-2013, Université Paris-Sud 11
- Math256-Exercise section of Fourier analysis, Polytech Engineer Undergraduate 2, 2012-2013, Université Paris-Sud 11

### Research Themes

Arithmetic Algebraic Geometry, Langlands Program,  $p$ -adic Hodge Theory, Shimura Varieties,  $p$ -Divisible Groups and their Moduli Spaces

### Doctoral dissertation

**Filtrations de Hodge-Newton, décomposition cellulaire et cohomologie de certains espaces de modules  $p$ -adiques**, Très Honorable, defended on 6 December 2012. Jury: Laurent FARGUES (thesis advisor), Jean-François DAT (examiner), Jean-Marc FONTAINE (president), Alain GENESTIER (rapporteur), Farid MOKRANE (examiner), Thomas ZINK (rapporteur)

### Publications and preprints

1. (with Miaofen Chen and Laurent Fargues) *On the structure of some  $p$ -adic period domains*, submitted, available at <http://arxiv.org.abs/1710.06935>
2. (with Chao Zhang) *Stratifications in good reductions of Shimura varieties of abelian type*, submitted, available at <http://arxiv.org.abs/1707.00439>
3. *On some generalized Rapoport-Zink spaces*, submitted, available at <http://arxiv.org.abs/1611.08977>
4. *Perfectoid Shimura varieties of abelian type*, International Mathematics Research Notices 2017, issue 21, 6599-6653.
5. *On the cohomology of some simple Shimura varieties with bad reduction*, Journal of the Institute of Mathematics of Jussieu 2019, volume 18, issue 1, 1-24.
6. *On the  $\ell$ -adic cohomology of some  $p$ -adically uniformized Shimura varieties*, Journal of the Institute of Mathematics of Jussieu 2018, volume 17, issue 5, 1197-1226.
7.  *$p$ -adic families of automorphic forms over some unitary Shimura varieties*, Mathematical Research Letters 23 (2016), no. 5, 1469-1506.

8. *On the Lefschetz trace formula for Lubin-Tate spaces*, Advances in Geometry 2016, volume 16, issue 1, 33-43.
9. *Cell decomposition of some unitary group Rapoport-Zink spaces*, Mathematische Annalen 2014, vol. 360, issue 3-4, 825-899.
10. *On the Hodge-Newton filtration for  $p$ -divisible groups with additional structures*, International Mathematics Research Notices 2014, issue 13, 3582-3631.

### Proceedings

- *Perfectoid Shimura varieties of abelian type*, Workshop Reductions of Shimura varieties, Oberwolfach Reports 2015, volume 12, issue 3.
- *Cell decomposition of some unitary group Rapoport-Zink spaces*, Workshop Reductions of Shimura varieties, Oberwolfach Reports 2012, volume 9, issue 3.

### Conferences/activities organized

- Cross Strait Workshop on Arithmetic Geometry, March 5-8, 2019 (with Jiangwei Xue, Chia-Fu Yu)
- Summer School on Shimura Varieties and Related Topics, September 11-22, 2017 (with Chia-Fu Yu)
- Workshop on  $p$ -adic Langlands, August 7-15, 2017 (with Yongquan Hu, Yichao Tian)
- Workshop on the  $p$ -adic local Langlands correspondence, July 13-20, 2016 (with Yongquan Hu)

### Invited talks in conferences and seminars (selected)

- Short course “Counting points on Shimura varieties”, December 2018, Wuhan University, China
- The Fourth Sino-Russian Conference in Mathematics, October 2018, The University of Hong Kong, China
- SUSTech Young Mathematicians Academic Forum, Southern University of Science and Technology, July 2018, Shenzhen, China
- Summer School on the Beilinson-Bloch-Kato conjecture on Rankin-Selberg motives and Gan-Gross-Prasad cycles, July 2018, Morningside Center of Mathematics, China
- Higher Invariants Seminar, June 2018, University of Regensburg, Germany
- Workshop “A  $p$ -adic Day”, April 2018, Peking University, China
- Workshop on Number Theory, July 2017, Tsinghua University, China
- Short course “Uniformization of Shimura varieties”, December 2016, Wuhan University, China
- The Second Sino-French Conference in Arithmetic Geometry, November 2016, TSIMF, Sanya, China
- Arithmetic Geometry Seminar, November 2016, East Normal University, Shanghai, China
- The Annual Conference of Chinese Mathematics Society, September 2016, Huhehaote, China
- Arithmetic Geometry Seminar, September 2016, University of Sciences and Technology of China, Hefei, China

- The 6th East Asian Number Theory Conference, August 2016, Chern Institute of Mathematics, Tianjin, China
- The 7th International Congress of Chinese Mathematics, August 2016, AMSS and Morningside Center of Mathematics, Beijing, China
- Workshop on Number theory, July 2016, Morningside Center of Mathematics, Beijing, China
- Workshop on the  $p$ -adic Langlands correspondence, July 2016, Morningside Center of Mathematics, Beijing, China
- Workshop on Arithmetic Geometry, July 2016, Xiamen, China
- Workshop on Colmez’s conjecture and special values of L-functions, June 2016, Capital Normal University, Beijing, China
- Workshop on Shimura varieties and related topics, June 2016, Academia Sinica, Taipei, Taiwan
- Short course “Cohomology of Shimura varieties”, in Winter School on Shimura varieties, December 2015, NCTS, Taipei, Taiwan
- Short course “Perfectoid Shimura varieties and applications”, November 2015, Shanghai Center for Mathematical Sciences, China
- Number theory and representation theory seminar, October 2015, Peking University, China
- Workshop “Reduction of Shimura varieties”, August 2015, Oberwolfach, Germany
- Pan Asian Number Theory Conference, in honor of the 70th birthday of Prof. John Henry Coates, July 2015, Sanya, China
- Seminar on number theory, January 2015, Institute of Mathematics, AMSS, Beijing, China
- Number theory seminar, January 2015, Peking University, China
- OberSeminar on  $p$ -adic Hodge theory, November 2014, Regensburg, Germany
- Morningside seminar on number theory, July 2014, Beijing, China
- ARithmetische Geometrie OberSeminar, June 2014, Bonn, Germany
- Number theory seminar, May 2014, Wuppertal, Germany
- Number theory and algebraic geometry seminar, March 2014, Capital Normal University, Beijing, China
- Short course on Shimura varieties and Rapoport-Zink spaces, March-April 2014, Morningside Center of Mathematics, Beijing, China
- Algebra and number theory seminar, February 2014, Besançon, France
- ARithmetische Geometrie OberSeminar, November 2013, Bonn, Germany
- Arbeitsgemeinschaft Arithmetische Geometrie, November 2013, Bonn, Germany
- Arbeitsgemeinschaft Arithmetische Geometrie, October 2013, Bonn, Germany
- Summer workshop on arithmetic geometry, July 2013, Tsinghua University, Beijing, China
- Seminar Algebraic Geometry, June 2013, Universität Regensburg, Regensburg, Germany
- Séminaire d’arithmétique à Lyon, May 2013, Ecole normale supérieure de Lyon, Lyon, France

- Séminaire Groupes Réductifs et Formes Automorphes, March 2013, Institut de Mathématiques de Jussieu, Paris, France
- Séminaire Géométrie Algébrique, March 2013, Université Rennes 1, Rennes, France
- Séminaire Géométrie Arithmétique et Motivique, December 2012, Université Paris 13, Villetaneuse, France
- Conference on the arithmetic geometry of Shimura varieties and related topics, July 2012, Hokkaido University, Japan
- Conference on the reduction of Shimura varieties, July 2012, Oberwolfach, Germany

**Participation in conferences (selected)**

- Workshop Reduction of Shimura varieties, August 2015, Oberwolfach, Germany
- Spring school on  $p$ -adic arithmetic, March 2015, Essen, Germany
- Workshop Automorphic forms, Shimura varieties, Galois representations and L-functions (in honor of Michael Harris), December 2014, Berkeley, USA
- Opening conference of SFB “Higher Invariants”, September 2014, Regensburg, Germany
- Conference on Arithmetic Algebraic Geometry on the occasion of Gerd Faltings’ 60th birthday, June 2014, Bonn, Germany
- Conference Arithmetic Algebraic Geometry, October 2013, Universität Paderborn, Paderborn, Germany
- Summer workshop on arithmetic geometry, July 2013, Tsinghua University, Beijing, China
- Conference in honor of Jean-Michel Bismut, May 2013, Université Paris-Sud 11, Orsay, France
- Conference on the arithmetic geometry of Shimura varieties and related topics, July 2012, Hokkaido University, Japan
- Conference Reduction of Shimura varieties, July 2012, Oberwolfach, Germany
- Conference in honor of Gérard Laumon, June 2012, Université Paris-Sud 11, Orsay, France
- Conference on the  $p$ -adic Langlands program, April 2012, Fields Institute, Toronto, Canada
- Conference on the cohomology of Shimura varieties and construction of Galois representations, March 2012, Fields Institute, Toronto, Canada
- Conference on the arithmetic of moduli spaces and motives, January 2012, Institut Henri Poincaré, Paris, France
- Workshop on flag varieties, May 2011, CIRM, Luminy, France
- Conference in honor of Jean-Marc Fontaine, March 2010, Orsay, France
- Trimester program on Galois representations, January-March 2010, Institut Henri Poincaré, Paris, France
- Conference on the influence of Alexander Grothendieck, January 2009, Institut des Hautes Études Scientifiques, Bures sur Yvette, France
- International conference on discrete groups, July 2006, Morningside Center of Mathematics, Beijing, China