

Xuhua He's publication list

Published and accepted papers

1. R. Ganapathy and X. He, *Tits groups of Iwahori-Weyl groups and presentations of Hecke algebras*, arXiv:2107.01768, to appear in Transformation groups.
2. X. He, R. Zhou and Y. Zhu, *Stabilizers of irreducible components of affine Deligne-Lusztig varieties*, arXiv:2109.02594, to appear in JEMS.
3. X. He and S. Nie, *Demazure product of the affine Weyl groups*, arXiv:2112.06376, Chinese version to appear in Acta Mathematica Sinica(Chinese Series), special volume in memory of Yuan Wang.
4. X. He, *Affine Deligne-Lusztig varieties associated with generic Newton points*, arXiv:2107.14461, to appear in Pure and Applied Mathematics Quarterly, special volume in honor of George Lusztig.
5. U. Görtz, X. He and M. Rapoport, *Extremal cases of Rapoport-Zink spaces*, J. Inst. Math. Jussieu 21 (2022), 1727–1782.
6. J. Adams, X. He and S. Nie, *From conjugacy classes in the Weyl group to semisimple conjugacy classes*, Pure Appl. Math. Q. 17 (2021), no. 4, 1159–1189, special volume in memory of Bert Kostant.
7. H. Bao and X. He, *Flag manifolds over semifields*, Algebra and Number theory 15 (2021), No. 8, 2037–2069.
8. D. Ciubotaru and X. He, *Cocenters of p -adic groups, III: Elliptic cocenter and rigid cocenter*, Peking Math J 4 (2021), 159–186.
9. X. He, *Cordial elements and dimensions of affine Deligne-Lusztig varieties*, Forum Math. Pi 9 (2021), e9.
10. H. Bao and X. He, *A Birkhoff-Bruhat Atlas for partial flag varieties*, Indag. Math. 32 (2021), 1152–1173, special issue to the memory of T.A. Springer.
11. J. Adams, X. He and S. Nie, *Partial orders on conjugacy classes in the Weyl group and on unipotent conjugacy classes*, Adv. Math. 383 (2021), Paper No. 107688, 28 pp.
12. X. He and Q. Yu, *Dimension formula of the affine Deligne-Lusztig variety*, Math. Ann. 379 (2021), 1747–1765.
13. X. He and R. Zhou, *On the connected components of affine Deligne-Lusztig varieties*, Duke Math. J. 169 (2020), no. 14, 2697–2765.
14. X. He, G. Pappas and M. Rapoport, *Good and semi-stable reductions of Shimura varieties*, J. Éc. polytech. Math. 7 (2020), 497–571.
15. X. He, S. Nie, *A geometric interpretation of Newton strata*, Selecta Math. (N.S.) 26 (2020), no. 1, Art. 4, 16 pp.
16. X. He, C. Li and Y. Zhu, *Fine Deligne-Lusztig varieties and arithmetic fundamental lemmas*, Forum Math. Sigma 7 (2019), e47.

17. U. Görtz, X. He and S. Nie, *Fully Hodge-Newton decomposable Shimura varieties*, Peking Math. J. 2 (2019), no. 2, 99–154.
18. X. He and J-L. Kim, *Jordan Decompositions of cocenters of reductive p -adic groups*, Represent. Theory 23 (2019), 294–324.
19. X. He, *Cocenters of p -adic groups, II: Induction map*, Adv. Math. **345** (2019), 972–997.
20. X. He, *Some results on affine Deligne-Lusztig varieties*, Proceedings of the International Congress of Mathematicians, Rio de Janeiro 2018. Vol. II. Invited lectures, 1345–1365, World Sci. Publ., Hackensack, NJ, 2018.
21. X. He and G. Williamson, *Soergel calculus and Schubert calculus*, Bull. Inst. Math. Acad. Sin. (N.S.) **13** (2018), no. 3, 317–350.
22. X. He and S. Nie, *On the acceptable elements*, Int. Math. Res. Not. IMRN (2018), no. 3, 907–931.
23. X. He, *Cocenters of p -adic groups, I: Newton decomposition*, Forum Math. Pi **6** (2018), e2.
24. X. He and S. Nie, *On the μ -ordinary locus of a Shimura variety*, Adv. Math. **321** (2017), 513–528.
25. D. Ciubotaru and X. He, *Cocenters and representations of affine Hecke algebra*, J. Eur. Math. Soc. **19** (2017), 3143–3177.
26. X. He, *Note on affine Deligne-Lusztig varieties*, Proceedings of the Sixth International Congress of Chinese Mathematicians. Vol. I, 297–307, Adv. Lect. Math. (ALM), 36, Int. Press, Somerville, MA, 2017.
27. X. He and S. Nie, *Cocenters and representations of pro- p Hecke algebras*, Represent. Theory 21 (2017), 82–105.
28. J. Adams and X. He, *Lifting of elements of Weyl groups*, J. Algebra 485 (2017), 142–165.
29. T. Haines and X. He, *Vertexwise criteria for admissibility of alcoves*, Amer. J. Math. **139** (2017), 769–784.
30. X. He and M. Rapoport, *Stratifications in the reduction of Shimura varieties*, Manuscripta Math. 152 (2017), 317–343.
31. X. He, *Hecke algebras and p -adic groups*, Current developments in mathematics 2015, 73–135, Int. Press, Somerville, MA, 2016.
32. X. He, *Kottwitz-Rapoport conjecture on unions of affine Deligne-Lusztig varieties*, Ann. Sci. École Norm. Sup. 49 (2016), 1125–1141.
33. D. Ciubotaru and X. He, *The cocenter of graded affine Hecke algebra and the density theorem*, J. Pure Appl. Algebra 220 (2016), 382–410.
34. X. He, *Centers and cocenters of 0-Hecke algebras*, Representations of reductive groups, 227–240, Prog. Math. Phys., 312, Birkhäuser/Springer, Cham, 2015.

35. X. He and T. Lam, *Projected Richardson varieties and affine Schubert varieties*, Ann. Inst. Fourier (Grenoble) 65 (2015), 2385–2412.
36. U. Görtz and X. He, *Basic loci of Coxeter type in Shimura varieties*, Camb. J. Math. 3 (2015), 323–353.
37. X. He and S. Nie, *P-alcoves, parabolic subalgebras and cocenters of affine Hecke algebras*, Selecta. Math. 21 (2015), 995–1019.
38. U. Görtz, X. He and S. Nie, *P-alcoves and nonemptiness of affine Deligne-Lusztig varieties*, Ann. Sci. École Norm. Sup. 48 (2015), 647–665.
39. D. Ciubotaru and X. He, *Green polynomials of Weyl groups, elliptic pairings, and the extended Dirac index*, Adv. Math. 283 (2015), 1–50.
40. X. He and S. Nie, *Minimal length elements of extended affine Weyl group*, Compos. Math. 150 (2014), 1903–1927.
41. X. He, *Geometric and homological properties of affine Deligne-Lusztig varieties*, Ann. of Math. (2) 179 (2014), 367–404.
42. X. He, K. Nishiyama, H. Ochiai and Y. Oshima, *Parametrization of orbits on double flag variety of finite type*, Transformation Groups 18 (2013), 1091–1136.
43. X. He, *Normality and Cohen-Macaulayness of local models of Shimura varieties*, Duke Math. J. 162 (2013), 2509–2523.
44. X. He and S. Nie, *Minimal length elements of finite Coxeter group*, Duke Math. J. 161 (2012), 2945–2967.
45. X. He and Z. Yang, *Elements with finite Coxeter part in an affine Weyl group*, J. Algebra 372 (2012), 204–210.
46. X. He and J. F. Thomsen, *Frobenius splitting on orbit closures of some spherical subgroups in flag varieties*, Transformation Groups 17 (2012), 691–715.
47. X. He and G. Lusztig, *A generalization of Steinberg’s cross-section*, J. Amer. Math. Soc. 25 (2012), 739–757.
48. C. Fang and X. He, *Notes on partial conjugation*, Fifth International Congress of Chinese Mathematicians, 171–181, AMS/IP Stud. Adv. Math., 51, 2012.
49. A. J. de Jong, X. He and J. Starr, *Families of rationally simply connected varieties over surfaces and torsors for semisimple groups*, Publ. Math. Inst. Hautes Études Sci. 114 (2011), 1–85.
50. X. He and J. Starr, *Semi-stable locus of a group compactification*, Represent. Theory 15 (2011), 574–583.
51. X. He, *Closure of Steinberg fibers and affine Deligne-Lusztig varieties*, Int. Math. Res. Notices 14 (2011), 3237–3260.
52. X. He and J.-H. Lu, *On intersections of certain partitions of a group compactification*, Int. Math. Res. Notices 11 (2011), 2534–2564.

53. U. Görtz and X. He, *Dimensions of affine Deligne-Lusztig varieties in affine flag varieties*, Documenta Math. 15 (2010), 1009–1028.
54. X. He, *Character sheaves on the semi-stable locus of a group compactification*, Adv. Math. 225 (2010), 3258–3290.
55. X. He, *A subalgebra of 0-Hecke algebra*, J. Algebra 322 (2009), 4030–4039.
56. X. He, *G-stable pieces and partial flag varieties*, Representation Theory, Contemp. Math., vol. 478, Amer. Math. Soc., Providence, RI, 2009, 61–70.
57. X. He and J. F. Thomsen, *Frobenius splitting and geometry of G-Schubert varieties*, Adv. Math. 219 (2008) 1469–1512.
58. X. He, *On the affineness of Deligne-Lusztig varieties*, J. Algebra 320 (2008), 1207–1219.
59. X. He and G. Lusztig, *Singular supports for character sheaves on a group compactification*, Geom. Funct. Anal. 17 (2008), 1915–1923.
60. X. He, *Character sheaves on certain spherical varieties*, Adv. Math. 217 (2008), 1154–1191.
61. X. He and J. F. Thomsen, *Geometry of $B \times B$ -orbit closures in equivariant embeddings*, Adv. Math. 216 (2007), 626–646.
62. X. He, *Minimal length elements in some double cosets of Coxeter groups*, Adv. Math. 215 (2007), 469–503.
63. X. He, *The G-stable pieces of the wonderful compactification*, Trans. Amer. Math. Soc. 359 (2007), 3005–3024.
64. X. He, *The character sheaves on the group compactification*, Adv. Math. 207 (2006), 805–827.
65. X. He and J. F. Thomsen, *On the closure of Steinberg fibers in the wonderful compactification*, Transformation Groups, 11 (2006), 427–438.
66. X. He, *Unipotent variety in the group compactification*, Adv. Math. 203 (2006), 109–131.
67. X. He, *Total positivity in the De Concini-Procesi compactification*, Represent. Theory 8 (2004), 52–71(electronic).

Preprints

68. H. Bao and X. He, *The $m = 2$ amplituhedron*, arXiv:1909.06015.
69. U. Görtz, X. He and S. Nie, *Basic loci of Coxeter type with arbitrary parahoric level*, arXiv:2006.08838.
70. X. He and G. Lusztig, *Total positivity and conjugacy classes*, arXiv:2201.12479.
71. H. Bao and X. He, *Product structure and regularity theorem for totally nonnegative flag varieties*, arXiv:2203.02137.
72. X. He, S. Nie and Q. Yu, *Affine Deligne-Lusztig varieties with finite Coxeter parts*, arXiv:2208.14058.

73. H. Bao and X. He, *Total positivity in twisted product of flag varieties*, arXiv:2211.11168.
74. X. He, *A generalization of cyclic shift classes*, arXiv:2301.03264.
75. X. He, *On affine Lusztig varieties*, arXiv: 2302.03203.
76. X. He, S. Nie and Q. Yu, *Zero-dimensional affine Deligne-Lusztig varieties*, in preparation.
77. X. He and S. Nie, *Straight conjugacy classes of Coxeter groups*, in preparation.