

ALGEBRAIC CYCLES, L -VALUES, AND EULER SYSTEMS

MSRI / SLMath program
January 17 to May 26, 2023

- [1] J. ARTHUR, D. ELLWOOD, and R. KOTTWITZ (eds.), *Harmonic analysis, the trace formula, and Shimura varieties* (Toronto, ON, 2003), Clay Mathematics Proceedings **4**, American Mathematical Society, Providence, RI, 2005, Clay Mathematics Institute, Cambridge, MA, ISBN 0-8218-3844-X. MR 2192984. Zbl 1083.11002.
- [2] J. S. BALAKRISHNAN, A. FOLSOM, M. LALÍN, and M. MANES (eds.), *Research directions in number theory: Women in Numbers IV* (Banff, AB, 2017), Association for Women in Mathematics series **19**, Springer, Cham, Switzerland, 2019, ISBN 978-3-030-19478-9; 978-3-030-19477-2. MR 4069376. Zbl 1428.11002. doi: 10.1007/978-3-030-19478-9.
- [3] J. BELLAÏCHE and G. CHENEVIER, *Families of Galois representations and Selmer groups*, Astérisque **324**, Société Mathématique de France, Paris, France, 2009, ISBN 978-2-85629-264-8. MR 2656025. http://www.numdam.org/issues/AST_2009__324__R1_0.
- [4] P. BERTHELOT, J.-M. FONTAINE, L. ILLUSIE, K. KATO, and M. RAPOPORT (eds.), *Cohomologies p -adiques et applications arithmétiques. III*, Astérisque **295**, Société Mathématique de France, Paris, France, 2004. MR 2104359. Zbl 1052.00008. http://www.numdam.org/issues/AST_2004__295_.
- [5] M. J. BERTIN, A. BUCUR, B. FEIGON, and L. SCHNEPS (eds.), *Women in numbers Europe* (Luminy, France, 2013), Association for Women in Mathematics series **2**, Springer, Cham, Switzerland, 2015, ISBN 978-3-319-17987-2; 978-3-319-17986-5. MR 3596598. Zbl 1329.11002. doi: 10.1007/978-3-319-17987-2.
- [6] I. I. BOUW, E. OZMAN, J. JOHNSON-LEUNG, and R. NEWTON (eds.), *Women in numbers Europe II: Contributions to number theory and arithmetic geometry* (Leiden, Netherlands, 2016), Association for Women in Mathematics series **11**, Springer, Cham, Switzerland, 2018, ISBN 978-3-319-74998-3; 978-3-319-74997-6. MR 3882701. Zbl 1398.11005. doi: 10.1007/978-3-319-74998-3.
- [7] J. H. BRUINIER, B. HOWARD, S. S. KUDLA, K. MADAPUSI PERA, M. RAPOPORT, and T. YANG, *Arithmetic divisors on orthogonal and unitary Shimura varieties*, Astérisque **421**, Société Mathématique de France, Paris, France, 2020, ISBN 978-2-85629-927-2. MR 4183375. Zbl 1485.11004. doi: 10.24033/ast.1124.
- [8] L. CLOZEL, M. HARRIS, J.-P. LABESSE, and B.-C. NGÔ (eds.), *On the stabilization of the trace formula*, Stabilization of the Trace Formula, Shimura Varieties, and Arithmetic Applications **1**, International Press, Somerville, MA, 2011, ISBN 978-1-57146-227-5. MR 2742611. Zbl 1255.11027.
- [9] J. COATES and R. SUJATHA, *Cyclotomic fields and zeta values*, Springer Monographs in Mathematics, Springer, Berlin, 2006, ISBN 978-3-540-33068-4; 3-540-33068-2. MR 2256969. Zbl 1100.11002. doi: 10.1007/978-3-540-33069-1.
- [10] J. COATES and M. J. TAYLOR (eds.), *L -functions and arithmetic* (Durham, UK, 1989), London Mathematical Society Lecture Note Series **153**, Cambridge University Press, Cambridge, 1991, ISBN 0-521-38619-5. MR 1110388. Zbl 0718.00005. doi: 10.1017/CBO9780511526053.
- [11] A.-C. COJOCARU, S. IONICA, and E. LORENZO GARCÍA (eds.), *Women in numbers Europe III: Research directions in number theory* (Cesson-Sévigné, France, 2019), Association for Women in Mathematics series **24**, Springer, Cham, Switzerland, 2021, ISBN 978-3-030-77699-2; 978-3-030-77700-5. MR 4417701. Zbl 1478.11005. doi: 10.1007/978-3-030-77700-5.

Date: February 9, 2023.

Bibliography by Benjamin Howard.

- [12] A.-C. COJOCARU, K. LAUTER, R. PRIES, and R. SCHEIDLER (eds.), *WIN—women in numbers: Research directions in number theory* (Banff, AB, 2008), Fields Institute Communications **60**, American Mathematical Society, Providence, RI, 2011, Fields Institute for Research in Mathematical Sciences, Toronto, ON, ISBN 978-0-8218-5226-2. MR 2777796. Zbl 1210.11005. doi: 10.1090/fic/060.
- [13] H. DARMON and S.-W. ZHANG (eds.), *Heegner points and Rankin L -series* (Berkeley, CA, 2001), Mathematical Sciences Research Institute Publications **49**, Cambridge University Press, Cambridge, UK, 2004, ISBN 0-521-83659-X. MR 2083206. Zbl 1051.11004. doi: 10.1017/CBO9780511756375. <http://library.msri.org/books/Book49>.
- [14] C. DAVID, M. LALÍN, and M. MANES (eds.), *Women in numbers 2: Research directions in number theory* (Banff, AB, 2011), Contemporary Mathematics **606**, American Mathematical Society, Providence, RI, 2013, *Centre de Recherches Mathématiques Proceedings*, Centre de Recherches Mathématiques, Montreal, QC, ISBN 978-1-4704-1022-3. MR 3222044. Zbl 1279.11002. doi: 10.1090/conm/606.
- [15] D. DELBOURGO, *Elliptic curves and big Galois representations*, London Mathematical Society Lecture Note Series **356**, Cambridge University Press, Cambridge, 2008, ISBN 978-0-521-72866-9. MR 2444858. Zbl 1188.11028. doi: 10.1017/CBO9780511721281.
- [16] E. E. EISCHEN, L. LONG, R. PRIES, and K. E. STANGE (eds.), *Directions in number theory: Proceedings of the 2014 WIN3 Workshop* (Banff, AB, 2014), Association for Women in Mathematics series **3**, Springer, Cham, Switzerland, 2016, ISBN 978-3-319-30976-7; 978-3-319-30974-3. MR 3596574. Zbl 1355.11001. doi: 10.1007/978-3-319-30976-7.
- [17] W. T. GAN, B. H. GROSS, D. PRASAD, and J.-L. WALDSPURGER, *Sur les conjectures de Gross et Prasad. I*, Astérisque **346**, Société Mathématique de France, Paris, France, 2012. MR 3052279. Zbl 1257.22001. http://www.numdam.org/issues/AST_2012__346_.
- [18] T. HAINES and M. HARRIS (eds.), *Shimura varieties*, London Mathematical Society Lecture Note Series **457**, Cambridge University Press, Cambridge, UK, 2020, ISBN 978-1-108-70486-1. MR 4439202. Zbl 1435.14004. doi: 10.1017/9781108649711.
- [19] G. HARDER and A. RAGHURAM, *Eisenstein cohomology for GL_N and the special values of Rankin–Selberg L -functions*, Annals of Mathematics Studies **203**, Princeton University Press, Princeton, NJ, 2020, ISBN 978-0-691-19789-0; 978-0-691-19788-3. MR 3970997. Zbl 1466.11001. doi: 10.1515/9780691197937.
- [20] H. HIDA, *p -adic automorphic forms on Shimura varieties*, Springer Monographs in Mathematics, Springer, New York, NY, 2004, ISBN 0-387-20711-2. MR 2055355. Zbl 1055.11032. doi: 10.1007/978-1-4684-9390-0.
- [21] S. S. KUDLA, M. RAPOPORT, and T. YANG, *Modular forms and special cycles on Shimura curves*, Annals of Mathematics Studies **161**, Princeton University Press, Princeton, NJ, 2006, ISBN 978-0-691-12551-0; 0-691-12551-1. MR 2220359. Zbl 1157.11027. doi: 10.1515/9781400837168.
- [22] W. KUYK and J.-P. SERRE (eds.), *Modular functions of one variable, III: Proceedings of the International Summer School* (Antwerp, Belgium, 1972), Lecture Notes in Mathematics **350**, Springer, Berlin, Germany, 1973, Corrected reprint 1986; ISBN 978-3-540-06483-1. MR 0323724. Zbl 0259.00007. doi: 10.1007/978-3-540-37802-0.
- [23] S. LANG, *Cyclotomic fields I and II*, 2nd ed., Graduate Texts in Mathematics **121**, Springer, New York, NY, 1990, ISBN 0-387-96671-4. MR 1029028. Zbl 0704.11038. doi: 10.1007/978-1-4612-0987-4.
- [24] B. MAZUR and K. RUBIN, *Kolyvagin systems*, Memoirs of the American Mathematical Society **168**:799, American Mathematical Society, Providence, RI, 2004. MR 2031496. Zbl 1055.11041. doi: 10.1090/memo/0799.
- [25] J. NEKOVÁŘ, *Selmer complexes*, Astérisque **310**, Société Mathématique de France, Paris, France, 2006, ISBN 978-2-85629-226-6. MR 2333680. Zbl 1211.11120. http://www.numdam.org/issues/AST_2006__310__R1_0.
- [26] B. PERRIN-RIOU, *p -adic L -functions and p -adic representations*, SMF/AMS Texts and Monographs **3**, American Mathematical Society, Providence, RI, 2000, Société Mathématique de France, Paris, France, ISBN 0-8218-1946-1. MR 1743508. Zbl 0988.11055.

- [27] M. RAPOPORT and T. ZINK, *Period spaces for p -divisible groups*, Annals of Mathematics Studies **141**, Princeton University Press, Princeton, NJ, 1996, ISBN 0-691-02782-X; 0-691-02781-1. MR 1393439. Zbl 0873.14039. doi: 10.1515/9781400882601.
- [28] K. RUBIN, *Euler systems*, Annals of Mathematics Studies **147**, Princeton University Press, Princeton, NJ, 2000, ISBN 0-691-05075-9; 0-691-05076-7. MR 1749177. Zbl 0977.11001. doi: 10.1515/9781400865208.
- [29] A. J. SCHOLL and R. L. TAYLOR (eds.), *Galois representations in arithmetic algebraic geometry* (Durham, UK, 1996), London Mathematical Society Lecture Note Series **254**, Cambridge University Press, Cambridge, 1998, ISBN 0-521-64419-4. MR 1696465. Zbl 0905.00052. doi: 10.1017/CBO9780511662010.
- [30] C. SOULÉ, D. ABRAMOVICH, J.-F. BURNOL, and J. KRAMER, *Lectures on Arakelov geometry*, Cambridge Studies in Advanced Mathematics **33**, Cambridge University Press, Cambridge, 1992, ISBN 0-521-41669-8. MR 1208731. Zbl 0812.14015. doi: 10.1017/CBO9780511623950.
- [31] L. C. WASHINGTON, *Introduction to cyclotomic fields*, 2nd ed., Graduate Texts in Mathematics **83**, Springer, New York, 1997, ISBN 0-387-94762-0. MR 1421575. Zbl 0966.11047. doi: 10.1007/978-1-4612-1934-7.
- [32] X. YUAN, S.-W. ZHANG, and W. ZHANG, *The Gross–Zagier formula on Shimura curves*, Annals of Mathematics Studies **184**, Princeton University Press, Princeton, NJ, 2013, ISBN 978-0-691-15592-0. MR 3237437. Zbl 1272.11082. doi: 10.1515/9781400845644.