References

[BCP97] W. Bosma, J. Cannon, and C. Playoust, *The Magma algebra system. I. The user language*, J. Symbolic Comput. **24** (1997), no. 3–4, 235–265, Computational algebra and number theory (London, 1993). MR 1 484 478

[Bir71] B. J. Birch, *Elliptic curves over* **Q***: A progress report*, 1969 Number Theory Institute (Proc. Sympos. Pure Math., Vol. XX, State Univ. New York, Stony Brook, N.Y., 1969), Amer. Math. Soc., Providence, R.I., 1971, pp. 396–400.

[BMSW07] Baur Bektemirov, Barry Mazur, William Stein, and Mark Watkins, *Average ranks of elliptic curves: tension between data and conjecture*, Bull. Amer. Math. Soc. (N.S.) **44** (2007), no. 2, 233–254 (electronic). MR MR2291676

[CD] A. Clingher and C. Doran, *Modular invariants for lattice polarized K3 surfaces*, Michigan Mathematical Journal **55**, no. 2, 355–393.

[CG] C. J. Cummins and T. Gannon, *Modular equations and the genus zero property of moonshine functions*, Invent. Math. **129**, no. 3, 413–443.

[CM] H. Cohn and J. McKay, *Spontaneous generation of modular invariants*, Math. Comp. **65**, no. 215, 1295–1309.

[CN] J. H. Conway and S.P. Norton, *Monstrous moonshine*, Bull. London Math. Soc. **11**, no. 3, 308–339.

[Coh] H. Cohn, *Fricke's two-valued modular equations*, Math. Comp. **51**, no. 184, 787–807.

[Cre] J. E. Cremona, *Elliptic Curves Data*, http://www.warwick.ac.uk/~masgaj/ftp/data/INDEX.html.

[Cre97] _____, *Algorithms for modular elliptic curves*, second ed., Cambridge University Press, Cambridge, 1997, http://www.maths.nott.ac.uk/personal/jec/book/.

[CY96] I. Chen and N. Yui, *Singular values of thompson series*, Groups, difference sets, and the Monster, de Gruyter, 1996, pp. 255–326.

[Dok04] Tim Dokchitser, *Computing special values of motivic L-functions*, Experiment. Math. **13** (2004), no. 2, 137–149. MR MR2068888 (2005f:11128)

[Gan] T. Gannon, *Monstrous moonshine: the first twenty-five years*, Bull. London Math. Soc. **38**, no. 1, 1–33.

[GAP] GAP, *Groups, algorithms, programming—a system for computational discrete algebra*, http://www-gap.mcs.st-and.ac.uk/.

[GJP+05] G. Grigorov, A. Jorza, S. Patrikis, C. Patrascu, and W. Stein, *Verification of the Birch and Swinnerton-Dyer Conjecture for Specific Elliptic Curves*, To appear in Mathematics of Computation (2005).

[GZ86] B. Gross and D. Zagier, *Heegner points and derivatives of L-series*, Invent. Math.

84 (1986), no. 2, 225–320. MR 87j:11057

[JBS03] A. Jorza, J. Balakrishna, and W. Stein, *The Smallest Conductor for an Elliptic Curve of Rank Four is Composite*, `http://wstein.org/rank4/` (2003).

[JLS07] D. Jetchev, K. Lauter, and W. Stein, *Explicit heegner points: Kolyvagin's conjecture and nontrivial elements in the Shafarevich-Tate group*, submitted.

[Kol91] V. A. Kolyvagin, *On the structure of Selmer groups*, Math. Ann. **291** (1991), no. 2, 253–259. MR 93e:11073

[Max] Maxima, *A GPL CAS based on DOE-MACSYMA*, `http://maxima.sourceforge.net/`.

[Maz06] B. Mazur, *Controlling our errors*, Nature **443** (7 September 2006).

[MTT86] B. Mazur, J. Tate, and J. Teitelbaum, *On p-adic analogues of the conjectures of Birch and Swinnerton-Dyer*, Invent. Math. **84** (1986), no. 1, 1–48. MR MR830037 (87e:11076)

[PAR] PARI, *A computer algebra system designed for fast computations in number theory*, `http://pari.math.u-bordeaux.fr/`.

[Sin] Singular, *A computer algebra system for polynomial computations*, `http://www.singular.uni-kl.de/`.

[Smi85] S. D. Smith, *On the head characters of the monster simple group*, Finite groups—coming of age, Amer. Math. Soc., 1985, pp. 303–313.

[Ste06a] W. Stein, *William Stein's Student Projects*, `http://wstein.org/projects`.

[Ste06b] ———, *Workshop: Computing with modular forms*, `http://wstein.org/msri06`.

[Ste07] William Stein, *SAGE Mathematics Software (Version 2.8)*, The SAGE Group, 2007, `http://www.sagemath.org`.

[SW02] W. Stein and M. Watkins, *A database of elliptic curves—first report*, Algorithmic number theory (Sydney, 2002), Lecture Notes in Comput. Sci., vol. 2369, Springer, Berlin, 2002, pp. 267–275. MR MR2041090 (2005h:11113)

[SW07] W. Stein and C. Wuthrich, *Computations About Tate-Shafarevich Groups Using Iwasawa Theory*, In preparation (2007).

[Wil00] A. J. Wiles, *The Birch and Swinnerton-Dyer Conjecture*, `http://www.claymath.org/prize_problems/birchsd.htm`.