

Publications and Preprints

C. McMullen

December 27, 2025

References

- [BHMS] R. Brayton, G. Hachtel, C. McMullen, and A. Sangiovanni-Vincentelli. *Logic Minimization Algorithms for VLSI Synthesis*. Kluwer Academic Publishers, 1984.
- [BM] R. Brayton and C. McMullen. The decomposition and factorization of Boolean expressions. In *IEEE International Symposium on Circuits and Systems*, pages 49–54, 1982.
- [BEM] R. Brooks, Y. Eliashberg, and C. McMullen. The spectral geometry of flat disks. *Duke Math. J.* **61** (1990), 119–132.
- [CMP] M. Chas, C. McMullen, and A. Phillips. Almost simple geodesics on the triply punctured sphere. *Math. Z.* **291** (2019), 1175–1196.
- [DKM] L. DeMarco, S. Koch, and C. McMullen. On the postcritical set of a rational map. *Math. Ann.* **377** (2020), 1–18.
- [DeM] L. DeMarco and C. McMullen. Trees and the dynamics of polynomials. *Ann. scient. Éc. Norm. Sup.* **41** (2008), 337–383.
- [DyM] P. Doyle and C. McMullen. Solving the quintic by iteration. *Acta Math.* **163** (1989), 151–180.
- [EaM] C. Earle and C. McMullen. Quasiconformal isotopies. In *Holomorphic Functions and Moduli I*, pages 143–154. Springer-Verlag: MSRI publications volume 10, 1988.
- [ElM] N. Elkies and C. McMullen. Gaps in $\sqrt{n} \bmod 1$ and ergodic theory. *Duke Math. J.* **123** (2004), 95–139.
- [EJM] C. Epstein, T. Jørgensen, and C. McMullen. Multiple intersections on negatively curved surfaces. *J. of Diff. Geom.* **33** (1991), 253–261.
- [EsM] A. Eskin and C. McMullen. Mixing, counting and equidistribution in Lie groups. *Duke Math. J.* **71** (1993), 181–209.

- [EMMW] A. Eskin, C. McMullen, R. Mukamel, and A. Wright. Billiards, quadrilaterals and moduli spaces. *J. Amer. Math. Soc.* **33** (2020), 1039–1086.
- [FM] M. Freedman and C. McMullen. Elder siblings and the taming of hyperbolic 3-manifolds. *Ann. Acad. Sci. Fen.* **23** (1998), 415–428.
- [GM] B. Gross and C. McMullen. Automorphisms of even unimodular lattices and unramified Salem numbers. *J. Algebra* **257** (2002), 265–290.
- [GHM] B. H. Gross, E. Hironaka, and C. T. McMullen. Cyclotomic factors of Coxeter polynomials. *J. Number Theory* **129** (2009), 1034–1043.
- [Mc1] C. McMullen. Hausdorff dimension of general Sierpinski carpets. *Nagoya J. of Math.* **96** (1984), 1–9.
- [Mc2] C. McMullen. Area and Hausdorff dimension of Julia sets of entire functions. *Trans. Amer. Math. Soc.* **300** (1987), 329–342.
- [Mc3] C. McMullen. Families of rational maps and iterative root-finding algorithms. *Annals of Math.* **125** (1987), 467–493.
- [Mc4] C. McMullen. Automorphisms of rational maps. In *Holomorphic Functions and Moduli I*, pages 31–60. Springer-Verlag, 1988.
- [Mc5] C. McMullen. Braiding of the attractor and the failure of iterative algorithms. *Invent. math.* **91** (1988), 259–272.
- [Mc6] C. McMullen. Amenability, Poincaré series and quasiconformal maps. *Invent. math.* **97** (1989), 95–127.
- [Mc7] C. McMullen. Iteration on Teichmüller space. *Invent. math.* **99** (1990), 425–454.
- [Mc8] C. McMullen. Cusps are dense. *Annals of Math.* **133** (1991), 217–247.
- [Mc9] C. McMullen. Rational maps and Kleinian groups. In *Proceedings of the International Congress of Mathematicians (Kyoto, 1990)*, pages 889–900. Springer-Verlag, 1991.
- [Mc10] C. McMullen. Amenable coverings of complex manifolds and holomorphic probability measures. *Invent. math.* **110** (1992), 29–37.

- [Mc11] C. McMullen. Geometrically finite maps and Kleinian groups. In B. Bielefeld, editor, *Conformal Dynamics Problem List*. arXiv:math/9201271v1, 1992.
- [Mc12] C. McMullen. Riemann surfaces and the geometrization of 3-manifolds. *Bull. Amer. Math. Soc.* **27** (1992), 207–216.
- [Mc13] C. McMullen. *Complex Dynamics and Renormalization*, volume 135 of *Annals of Math. Studies*. Princeton University Press, 1994.
- [Mc14] C. McMullen. Frontiers in complex dynamics. *Bull. Amer. Math. Soc.* **31** (1994), 155–172.
- [Mc15] C. McMullen. Rational maps and Teichmüller space. In V. P. Havin and N. K. Nikolskii, editors, *Linear and Complex Analysis Problem Book*, volume 1574 of *Lecture Notes in Math.*, pages 430–433. Springer, 1994.
- [Mc16] C. McMullen. The classification of conformal dynamical systems. In *Current Developments in Mathematics, 1995*, pages 323–360. International Press, 1995.
- [Mc17] C. McMullen. *Renormalization and 3-Manifolds which Fiber over the Circle*, volume 142 of *Annals of Math. Studies*. Princeton University Press, 1996.
- [Mc18] C. McMullen. Complex earthquakes and Teichmüller theory. *J. Amer. Math. Soc.* **11** (1998), 283–320.
- [Mc19] C. McMullen. Hausdorff dimension and conformal dynamics III: Computation of dimension. *Amer. J. Math.* **120** (1998), 691–721.
- [Mc20] C. McMullen. Kleinian groups and John domains. *Topology* **37** (1998), 485–496.
- [Mc21] C. McMullen. Lipschitz maps and nets in Euclidean space. *Geom. Funct. Anal.* **8** (1998), 304–314.
- [Mc22] C. McMullen. Rigidity and inflexibility in conformal dynamics. In *Proceedings of the International Congress of Mathematicians (Berlin, 1998)*, pages 841–855. Doc. Math., 1998.
- [Mc23] C. McMullen. Self-similarity of Siegel disks and the Hausdorff dimension of Julia sets. *Acta Math.* **180** (1998), 247–292.

- [Mc24] C. McMullen. Hausdorff dimension and conformal dynamics I: Kleinian groups and strong limits. *J. Diff. Geom.* **51** (1999), 471–515.
- [Mc25] C. McMullen. From dynamics on surfaces to rational points on curves. *Bull. Amer. Math. Soc.* **37** (2000), 119–140.
- [Mc26] C. McMullen. Hausdorff dimension and conformal dynamics II: Geometrically finite rational maps. *Comm. Math. Helv.* **75** (2000), 535–593.
- [Mc27] C. McMullen. The Mandelbrot set is universal. In Tan L., editor, *The Mandelbrot Set, Theme and Variations*, pages 1–18. Cambridge University Press, 2000.
- [Mc28] C. McMullen. The moduli space of Riemann surfaces is Kähler hyperbolic. *Annals of Math.* **151** (2000), 327–357.
- [Mc29] C. McMullen. Polynomial invariants for fibered 3-manifolds and Teichmüller geodesics for foliations. *Ann. scient. Éc. Norm. Sup.* **33** (2000), 519–560.
- [Mc30] C. McMullen. Local connectivity, Kleinian groups, and geodesics on the blowup of the torus. *Invent. math.* **146** (2001), 35–91.
- [Mc31] C. McMullen. The Alexander polynomial of a 3-manifold and the Thurston norm on cohomology. *Ann. scient. Éc. Norm. Sup.* **35** (2002), 153–172.
- [Mc32] C. McMullen. Coxeter groups, Salem numbers and the Hilbert metric. *Publ. Math. IHES* **95** (2002), 151–183.
- [Mc33] C. McMullen. Dynamics on K3 surfaces: Salem numbers and Siegel disks. *J. reine angew. Math.* **545** (2002), 201–233.
- [Mc34] C. McMullen. Billiards and Teichmüller curves on Hilbert modular surfaces. *J. Amer. Math. Soc.* **16** (2003), 857–885.
- [Mc35] C. McMullen. Teichmüller geodesics of infinite complexity. *Acta Math.* **191** (2003), 191–223.
- [Mc36] C. McMullen. Minkowski’s conjecture, well-rounded lattices and topological dimension. *J. Amer. Math. Soc.* **18** (2005), 711–734.

- [Mc37] C. McMullen. Mosaïque sphérique. In *Les Plus Belles Images de Science*, Suppl. No. 1055, pages 42–43. Science et Vie, 2005.
- [Mc38] C. McMullen. Teichmüller curves in genus two: Discriminant and spin. *Math. Ann.* **333** (2005), 87–130.
- [Mc39] C. McMullen. Teichmüller curves in genus two: The decagon and beyond. *J. reine angew. Math.* **582** (2005), 173–200.
- [Mc40] C. McMullen. Prym varieties and Teichmüller curves. *Duke Math. J.* **133** (2006), 569–590.
- [Mc41] C. McMullen. Teichmüller curves in genus two: Torsion divisors and ratios of sines. *Invent. math.* **165** (2006), 651–672.
- [Mc42] C. McMullen. Dynamics of $SL_2(\mathbf{R})$ over moduli space in genus two. *Annals of Math.* **165** (2007), 397–456.
- [Mc43] C. McMullen. Dynamics on blowups of the projective plane. *Publ. Math. IHES* **105** (2007), 49–89.
- [Mc44] C. McMullen. Foliations of Hilbert modular surfaces. *Amer. J. Math.* **129** (2007), 183–215.
- [Mc45] C. McMullen. Thermodynamics, dimension and the Weil-Petersson metric. *Inv. math.* **173** (2008), 365–425.
- [Mc46] C. McMullen. A compactification of the space of expanding maps on the circle. *Geom. Funct. Anal.* **18** (2009), 2101–2119.
- [Mc47] C. McMullen. Ribbon \mathbb{R} -trees and holomorphic dynamics on the unit disk. *J. Topol.* **2** (2009), 23–76.
- [Mc48] C. McMullen. Rigidity of Teichmüller curves. *Math. Res. Lett.* **16** (2009), 647–650.
- [Mc49] C. McMullen. Uniformly Diophantine numbers in a fixed real quadratic field. *Compos. Math.* **145** (2009), 827–844.
- [Mc50] C. McMullen. Dynamics on the unit disk: short geodesics and simple cycles. *Comm. Math. Helv.* **85** (2010), 723–749.
- [Mc51] C. McMullen. Winning sets, quasiconformal maps and Diophantine approximation. *Geom. Funct. Anal.* **20** (2010), 726–740.

- [Mc52] C. McMullen. The evolution of geometric structures on 3-manifolds. *Bull. Amer. Math. Soc.* **48** (2011), 259–274.
- [Mc53] C. McMullen. K3 surfaces, entropy and glue. *J. reine angew. Math.* **658** (2011), 1–25.
- [Mc54] C. McMullen. Braid groups and Hodge theory. *Math. Ann.*, **355** (2013), 893–946.
- [Mc55] C. McMullen. Diophantine and ergodic foliations on surfaces. *J. Topol.* **6** (2013), 349–360.
- [Mc56] C. McMullen. Entropy on Riemann surfaces and Jacobians of finite covers. *Comment. Math. Helv.* **88** (2013), 953–964.
- [Mc57] C. McMullen. Knots which behave like the prime numbers. *Compos. Math.* **149** (2013), 1235–1244.
- [Mc58] C. McMullen. Navigating moduli space with complex twists. *J. Eur. Math. Soc.* **15** (2013), 1223–1243.
- [Mc59] C. McMullen. The mathematical work of Maryam Mirzakhani. In *Proceedings of the International Congress of Mathematicians (Seoul 2014)*, volume 1, pages 73–79. Kyung Moon SA Co. Ltd., 2014.
- [Mc60] C. McMullen. Moduli spaces in genus zero and inversion of power series. *Enseign. Math.* **60** (2014), 25–30.
- [Mc61] C. McMullen. Moduli spaces of isoperiodic forms on Riemann surfaces. *Duke Math. J.* **163** (2014), 2271–2323.
- [Mc62] C. McMullen. Cascades in the dynamics of measured foliations. *Ann. scient. Éc. Norm. Sup.* **48** (2015), 1–39.
- [Mc63] C. McMullen. Entropy and the clique polynomial. *J. Topol.* **8** (2015), 184–212.
- [Mc64] C. McMullen. Automorphisms of projective K3 surfaces with minimum entropy. *Invent. math.* **203** (2016), 179–215.
- [Mc65] C. McMullen. The Gauss–Bonnet theorem for cone manifolds and volumes of moduli spaces. *Amer. J. Math.* **139** (2017), 261–291.

- [Mc66] C. McMullen. Teichmüller dynamics and unique ergodicity via currents and Hodge theory. *J. reine angew. Math.* **768** (2020), 39–54.
- [Mc67] C. McMullen. Modular symbols for Teichmüller curves. *J. reine angew. Math* **777** (2021), 89–125.
- [Mc68] C. McMullen. Billiards, heights and the arithmetic of non-arithmetic groups. *Invent. math.* **228** (2022), 1309–1351.
- [Mc69] C. McMullen. Billiards and Teichmüller curves. *Bull. Amer. Math. Soc.* **60** (2023), 195–250.
- [Mc70] C. McMullen. Galois orbits in the moduli space of all triangles. *J. Math. Soc. Japan* **77** (2025), 31–56.
- [Mc71] C. McMullen. Arbeitstagung 2003 – Billiards and Hilbert modular surfaces. *Max-Planck Institut Preprint, 2003-60-e*.
- [Mc72] C. McMullen. Arbeitstagung 2007 – Dynamics on algebraic surfaces. *Max-Planck Institut Preprint, 2007-75-k*.
- [Mc73] C. McMullen. Billiards in regular polygons. *Enseign. Math., to appear, 2026*.
- [Mc74] C. McMullen. Calculating the exponent of divergence of the Poincaré series. *Preprint, Harvard, 1984*.
- [Mc75] C. McMullen. Earthquakes, algebraic curves and differential equations. *In preparation, 2025*.
- [Mc76] C. McMullen. Earthquakes and random Farey homeomorphisms. *In preparation, 2024*.
- [Mc77] C. McMullen. Letter to Leininger *et al*, 13 July 2003.
- [Mc78] C. McMullen. The question mark function, welding, and complex dynamics. *Inv. math., to appear, 2026*.
- [Mc79] C. McMullen. Salem number/Coxeter group/K3 surface package. dx.doi.org/doi:10.7910/DVN/29211.
- [Mc80] C. McMullen. Triangle groups and Hilbert modular varieties. *J. Math. Soc. Japan, to appear, 2026*.

- [Mc81] C. McMullen. Triangle groups: Cusps, congruence and chaos. *Algebra and Number Theory*, to appear, 2026.
- [Mc82] C. McMullen. Web page. www.math.harvard.edu/~ctm.
- [MMO1] C. McMullen, A. Mohammadi, and H. Oh. Horocycles in hyperbolic 3-manifolds. *Geom. Funct. Anal.* **26** (2016), 961–973.
- [MMO2] C. McMullen, A. Mohammadi, and H. Oh. Geodesic planes in hyperbolic 3-manifolds. *Invent. math.* **209** (2017), 425–461.
- [MMO3] C. McMullen, A. Mohammadi, and H. Oh. Geodesic planes in the convex core of an acylindrical 3-manifold. *Duke Math. J.* **171** (2022), 1309–1351.
- [MMW] C. McMullen, R. Mukamel, and A. Wright. Cubic curves and totally geodesic subvarieties of moduli space. *Annals of Math.* **185** (2017), 957–990.
- [MO] C. McMullen and R. Otten. Minimum length linear transistor arrays in MOS. In *IEEE International Symposium on Circuits and Systems*, volume 2, pages 1783–1786, 1988.
- [MS] C. McMullen and J. Shearer. Prime implicants, minimum covers, and complexity of logic simplification. *IEEE Transactions on Computers* **C-35** (1986), 761–762.
- [McS] C. McMullen and D. Sullivan. Quasiconformal homeomorphisms and dynamics III: The Teichmüller space of a holomorphic dynamical system. *Adv. Math.* **135** (1998), 351–395.
- [McT] C. McMullen and C. Taubes. 4-manifolds with inequivalent symplectic forms and 3-manifolds with inequivalent fibrations. *Math. Res. Lett.* **6** (1999), 681–696.
- [MT] C. McMullen and T. Torkaman. Teichmüller theory via random simple closed curves. *Preprint*, 2025.