

# Bibliography

- [Aar97] J. Aaronson. *An introduction to infinite ergodic theory*. AMS, 1997.
- [Ada04] Boris Adamczewski. Symbolic discrepancy and self-similar dynamics. *Ann. Inst. Fourier (Grenoble)*, 54(7):2201–2234 (2005), 2004.
- [ADDS15] A. Avila, D. Dolgopyat, E. Duryev, and O. Sarig. The visits to zero of a random walk driven by an irrational rotation. *Israel J. Math.*, 207(2):653–717, 2015.
- [AH] A. Avila and P. Hubert. Recurrence for the windtree model. preprint, <http://www.cmi.univ-mrs.fr/~hubert/articles/avila-hub.pdf>.
- [ANSS02] Jon Aaronson, Hitoshi Nakada, Omri Sarig, and Rita Solomyak. Invariant measures and asymptotics for some skew products. *Israel J. Math.*, 128:93–134, 2002.
- [AOW85] P. Arnoux, D. Ornstein, and B. Weiss. Cutting and stacking, interval exchanges and geometric models. *Israel J. of Math.*, 50, 1985.
- [Arn06] Vladimir I. Arnold. *Ordinary differential equations*. Universitext. Springer-Verlag, Berlin, 2006. Translated from the Russian by Roger Cooke, Second printing of the 1992 edition.
- [Art] Mauro Artigiani. Exceptional ergodic directions in eaton lenses. preprint, arXiv:1503.02191.
- [AS60] Lars V. Ahlfors and Leo Sario. *Riemann surfaces*. Princeton Mathematical Series, No. 26. Princeton University Press, Princeton, N.J., 1960.
- [Atk76] Giles Atkinson. Recurrence of co-cycles and random walks. *J. London Math. Soc. (2)*, 13(3):486–488, 1976.
- [Bea83] Alan F. Beardon. *The geometry of discrete groups*, volume 91 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 1983.
- [BG04] N. Bergeron and T. Gelander. A note on local rigidity. *Geom. Dedicata*, 107:111–131, 2004.
- [BKMP11] P. Bachurin, K. Khanin, J. Marklof, and A. Plakhov. Perfect retroreflectors and billiard dynamics. *J. of Modern Dyn.*, 5:33–48, 2011.
- [Blu12] Frank Blume. An entropy estimate for infinite interval exchange transformations. *Math. Z.*, 272(1-2):17–29, 2012.
- [BM99] J.-C. Beniere and G. Meigniez. Flows without minimal set. *Ergodic Theory Dynam. Systems*, 19(1):21–30, 1999.
- [Bos92] Michael D. Boshernitzan. A condition for unique ergodicity of minimal symbolic flows. *Ergodic Theory Dynam. Systems*, 12(3):425–428, 1992.
- [Bow12] Joshua P. Bowman. Finiteness conditions on translation surfaces. In *Quasiconformal mappings, Riemann surfaces, and Teichmüller spaces. AMS special session in honor of Clifford J. Earle, Syracuse, NY, USA, October 2–3, 2010*, pages 31–40. Providence, RI: American Mathematical Society (AMS), 2012.
- [Buf14] Alexander I. Bufetov. Limit theorems for translation flows. *Ann. of Math. (2)*, 179(2):431–499, 2014.

- [BV13] Joshua P. Bowman and Ferrán Valdez. Wild singularities of flat surfaces. *Israel J. Math.*, 197(1):69–97, 2013.
- [Cab12] J. Cabrol. *Origamis infinis: groupe de Veech et flot linéaire*. PhD thesis, Université d’Aix-Marseille, 2012. PhD Thesis.
- [Cal04] K. Calta. Veech surfaces and complete periodicity in genus two. *J. of Amer. Math. Soc.*, 17(4):871–908, 2004.
- [CC09] N. Chevallier and J.-P. Conze. Examples of recurrent or transient stationary walks in  $\mathbb{R}^d$  over a rotation of  $\mathbb{T}^2$ . *Contemporary Mathematics*, 485:71–84, 2009.
- [CE] J. Chaika and A. Eskin. Every flat surface is birkhoff and osceledets generic in almost every direction. preprint, arXiv:1305.1104.
- [CFS82] I. P. Cornfeld, S. V. Fomin, and Ya. G. Sinai. *Ergodic theory*, volume 245 of *Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences]*. Springer-Verlag, New York, 1982. Translated from the Russian by A. B. Sosinskiĭ.
- [CGL06] R. Chamanara, F. P. Gardiner, and N. Latic. A hyperelliptic realization of the horseshoe and baker maps. *Erg. Th. and Dyn. Syst.*, 26(6):1749–1768, 2006.
- [Cha04] R. Chamanara. *Affine automorphism groups of surfaces of infinite type*, volume 355, pages 123–145. American Math. Soc., 2004.
- [CI80] David Roxbee Cox and Valerie Isham. *Point processes*. Chapman & Hall, London-New York, 1980. Monographs on Applied Probability and Statistics.
- [CK76] J.-P. Conze and M. Keane. Ergodicité d’un flot cylindrique. In *Séminaire de Probabilités, I (Univ. Rennes, Rennes, 1976)*, Exp. No. 5, page 7. Dépt. Math. Informat., Univ. Rennes, Rennes, 1976.
- [Con76] J.-P. Conze. Equirépartition et ergodicité de transformations cylindriques. In *Séminaire de Probabilités, I (Univ. Rennes, Rennes, 1976)*, Exp. No. 2, page 21. Dépt. Math. Informat., Univ. Rennes, Rennes, 1976.
- [Con09] J.-P. Conze. Recurrence, ergodicity and invariant measures for cocycles over a rotation. *Contemporary Mathematics*, 485:45–70, 2009.
- [Cou] R. Coulon. Infinite periodic groups of even exponents. preprint, arXiv:1810.08372v3.
- [CR14] Jon Chaika and David Ralston.  $\omega$ -recurrence in skew products. *Ergodic Theory Dynam. Systems*, 34(5):1525–1537, 2014.
- [CW12] Meital Cohen and Barak Weiss. Parking garages with optimal dynamics. *Geom. Dedicata*, 161:157–167, 2012.
- [DEDML98] Mirko Degli Esposti, Gianluigi Del Magno, and Marco Lenci. An infinite step billiard. *Nonlinearity*, 11(4):991–1013, 1998.
- [Del13] V. Delecroix. Divergent directions in some periodic wind-tree models. *J. of Modern Dyn.*, 7:1–29, 2013.
- [DHL14] Vincent Delecroix, Pascal Hubert, and Samuel Lelièvre. Diffusion for the periodic wind-tree model. *Ann. Sci. Éc. Norm. Supér. (4)*, 47(6):1085–1110, 2014.
- [DK03] Reinhard Diestel and Daniela Kühn. Graph-theoretical versus topological ends of graphs. *J. Combin. Theory Ser. B*, 87(1):197–206, 2003. Dedicated to Crispin St. J. A. Nash-Williams.
- [Don11] Simon Donaldson. *Riemann surfaces*, volume 22 of *Oxford Graduate Texts in Mathematics*. Oxford University Press, Oxford, 2011.
- [Dow11] Tomasz Downarowicz. *Entropy in dynamical systems*, volume 18 of *New Mathematical Monographs*. Cambridge University Press, Cambridge, 2011.

- [DVJ03] D. J. Daley and D. Vere-Jones. *An introduction to the theory of point processes. Vol. I. Probability and its Applications* (New York). Springer-Verlag, New York, second edition, 2003. Elementary theory and methods.
- [DZ] V. Delecroix and A. Zorich. Cries and whispers in windtree forests. to appear in proceeding of Thurston's conference.
- [EDG] C. Fougere E. Duryev and S. Ghazouani. Affine surfaces and their veech groups. preprint, arXiv:1609.02130.
- [EE12] P. Ehrenfest and T. Ehrenfest. Begriffliche grundlagen der statistischen auffassung in der mechanik. *Encykl. d. Math. Wissensch.*, IV 2 II, Heft 6, 90 S, 1912. (in German, translated in:) *The conceptual foundations of the statistical approach in mechanics*, (trans. Moravcsik, M. J.), 10-13 Cornell University Press, Itacha NY, (1959).
- [EM] A. Eskin and M. Mirzakhani. Invariant and stationary measures for the  $sl(2,r)$  action on moduli space. preprint, arXiv:1302:3320.
- [EMM15] Alex Eskin, Maryam Mirzakhani, and Amir Mohammadi. Isolation, equidistribution, and orbit closures for the  $SL(2, \mathbb{R})$  action on moduli space. *Ann. of Math. (2)*, 182(2):673–721, 2015.
- [FK36] R. Fox and R. Kershner. Concerning the transitive properties of geodesics in rational polyhedron. *Duke*, 2(1):147–150, 1936.
- [FK92] H. M. Farkas and I. Kra. *Riemann surfaces*, volume 71 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, second edition, 1992.
- [FLP79] Albert Fathi, François Laudenbach, and Valentin Poénaru. *Travaux de Thurston sur les surfaces*, volume 66 of *Astérisque*. Société Mathématique de France, Paris, 1979. Séminaire Orsay, With an English summary.
- [FM12] Benson Farb and Dan Margalit. *A primer on mapping class groups*, volume 49 of *Princeton Mathematical Series*. Princeton University Press, Princeton, NJ, 2012.
- [FM14] Giovanni Forni and Carlos Matheus. Introduction to Teichmüller theory and its applications to dynamics of interval exchange transformations, flows on surfaces and billiards. *J. Mod. Dyn.*, 8(3-4):271–436, 2014.
- [FMZ11] G. Forni, C. Matheus, and A. Zorich. Square-tilde cyclic covers. *J. of Modern Dyn.*, 5(2):285–318, 2011.
- [For91] Otto Forster. *Lectures on Riemann surfaces*, volume 81 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 1991. Translated from the 1977 German original by Bruce Gilligan, Reprint of the 1981 English translation.
- [For02] G. Forni. Deviation of ergodic averages for area-preserving flows on surfaces of higher genus. *Annals of Math.*, 155(1):1–103, 2002.
- [For06] G. Forni. *On the Lyapunov exponents of the Kontsevich-Zorich cocycle*, pages 549–580. Elsevier, 2006.
- [Fre31] Hans Freudenthal. Über die Enden topologischer Räume und Gruppen. *Math. Z.*, 33:692–713, 1931.
- [Fri85] David Fried. Growth rate of surface homeomorphisms and flow equivalence. *Ergodic Theory Dynam. Systems*, 5(4):539–563, 1985.
- [FS14] Krzysztof Frączek and Martin Schmoll. Directional localization of light rays in a periodic array of retro-reflector lenses. *Nonlinearity*, 27(7):1689–1707, 2014.
- [FSC] Krzysztof Frączek, Ronggang Shi, and Ulcigrai Corinna. Genericity on curves and applications: pseudo-integrable billiards, eaton lenses and gap distributions. preprint, arXiv 1508.03946.

- [FU14a] Krzysztof Frączek and Corinna Ulcigrai. Ergodic directions for billiards in a strip with periodically located obstacles. *Comm. Math. Phys.*, 327(2):643–663, 2014.
- [FU14b] Krzysztof Frączek and Corinna Ulcigrai. Non-ergodic  $\mathbb{Z}$ -periodic billiards and infinite translation surfaces. *Invent. Math.*, 197(2):241–298, 2014.
- [Ful95] William Fulton. *Algebraic topology*, volume 153 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 1995. A first course.
- [GH55] W. B. Gottshalk and G. A. Hedlund. *Topological dynamics*. AMS, 1955.
- [Ghy95] Étienne Ghys. Topologie des feuilles génériques. *Ann. of Math. (2)*, 141(2):387–422, 1995.
- [GT96] Eugene Gutkin and Serge Troubetzkoy. Directional flows and strong recurrence for polygonal billiards. In *International Conference on Dynamical Systems (Montevideo, 1995)*, volume 362 of *Pitman Res. Notes Math. Ser.*, pages 21–45. Longman, Harlow, 1996.
- [Hat02] Allen Hatcher. *Algebraic topology*. Cambridge University Press, Cambridge, 2002.
- [HHW13] W. Patrick Hooper, Pascal Hubert, and Barak Weiss. Dynamics on the infinite staircase. *Discrete Contin. Dyn. Syst.*, 33(9):4341–4347, 2013.
- [HL06a] Pascal Hubert and Erwan Lanneau. Veech groups without parabolic elements. *Duke Math. J.*, 133(2):335–346, 2006.
- [HL06b] Pascal Hubert and Samuel Lelièvre. Prime arithmetic Teichmüller discs in  $\mathcal{H}(2)$ . *Isr. J. Math.*, 151:281–321, 2006.
- [HLT11] Pascal Hubert, Samuel Lelièvre, and Serge Troubetzkoy. The Ehrenfest wind-tree model: periodic directions, recurrence, diffusion. *J. Reine Angew. Math.*, 656:223–244, 2011.
- [Hoo15] W. Patrick Hooper. The invariant measures of some infinite interval exchange maps. *Geom. Topol.*, 19(4):1895–2038, 2015.
- [HPS92] Richard H. Herman, Ian F. Putnam, and Christian F. Skau. Ordered Bratteli diagrams, dimension groups and topological dynamics. *Internat. J. Math.*, 3(6):827–864, 1992.
- [HS06] Pascal Hubert and Thomas A. Schmidt. An introduction to Veech surfaces. In *Handbook of dynamical systems. Volume 1B*, pages 501–526. Amsterdam: Elsevier, 2006.
- [HS08] Frank Herrlich and Gabriela Schmithüsen. An extraordinary origami curve. *Math. Nachr.*, 281(2):219–237, 2008.
- [HS10] P. Hubert and G. Schmithüsen. Infinite translation surfaces with infinitely generated Veech groups. *J. of Modern Dyn.*, 4(4):715–732, 2010.
- [Hub06] John Hamal Hubbard. *Teichmüller theory and applications to geometry, topology, and dynamics. Vol. 1*. Matrix Editions, Ithaca, NY, 2006. Teichmüller theory, With contributions by Adrien Douady, William Dunbar, Roland Roeder, Sylvain Bonnot, David Brown, Allen Hatcher, Chris Hruska and Sudeb Mitra, With forewords by William Thurston and Clifford Earle.
- [Hur92] A. Hurwitz. Ueber algebraische Gebilde mit eindeutigen Transformationen in sich. *Math. Ann.*, 41(3):403–442, 1892.
- [HW80] J. Hardy and J. Weber. Diffusion in a periodic wind-tree model. *J. of Math. Phys.*, 21(7):1802–1808, 1980.
- [HW12] W. Patrick Hooper and Barak Weiss. Generalized staircases: recurrence and symmetry. *Ann. Inst. Fourier (Grenoble)*, 62(4):1581–1600, 2012.
- [HW13] Pascal Hubert and Barak Weiss. Ergodicity for infinite periodic translation surfaces. *Compos. Math.*, 149(8):1364–1380, 2013.
- [Ina99] Takashi Inaba. An example of a flow on a non-compact surface without minimal set. *Ergodic Theory Dynam. Systems*, 19(1):31–33, 1999.

- [JS14] Chris Johnson and Martin Schmoll. Pseudo-Anosov eigenfoliations on Panov planes. *Electron. Res. Announc. Math. Sci.*, 21:89–108, 2014.
- [Kat73] A. B. Katok. Invariant measures of flows on orientable surfaces. *Dokl. Akad. Nauk SSSR*, 211:775–778, 1973.
- [Kat92] Svetlana Katok. *Fuchsian groups*. Chicago: The University of Chicago Press, 1992.
- [Kea75] M. Keane. Interval exchange transformations. *Math. Zeitschr.*, 141:77–102, 1975.
- [Kes60] Harry Kesten. Uniform distribution mod 1. *Ann. of Math. (2)*, 71:445–471, 1960.
- [KH95] Anatole Katok and Boris Hasselblatt. *Introduction to the modern theory of dynamical systems*, volume 54 of *Encyclopedia of Mathematics and its Applications*. Cambridge University Press, Cambridge, 1995. With a supplementary chapter by Katok and Leonardo Mendoza.
- [KMS86] S. Kerckhoff, H. Masur, and J. Smillie. Ergodicity of billiard flows and quadratic differentials. *Annals of Math.*, 124(2):293–311, 1986.
- [Kry75] A. B. Krygin. An example of a cylindrical cascade with anomalous metric properties. *Vestnik Moskov. Univ. Ser. I Mat. Meh.*, 30(5):26–32, 1975.
- [KS66] A. B. Katok and A. M. Stepin. Approximation of ergodic dynamical systems by periodic transformations. *Dokl. Akad. Nauk SSSR*, 171:1268–1271, 1966.
- [KZ75] A. Katok and Z. Zemliakov. Topological transitivity of billiards in polygons. *Maths notes*, 18:760–764, 1975.
- [Lar01] Michael Larsen. How often is  $84(g-1)$  achieved? *Israel J. Math.*, 126:1–16, 2001.
- [Lei04] Christopher J. Leininger. On groups generated by two positive multi-twists: Teichmüller curves and Lehmer’s number. *Geom. Topol.*, 8:1301–1359 (electronic), 2004.
- [Lin] Kathryn Lindsey. Counting invariant components of hyperelliptic translation surfaces. arXiv:1302.3282.
- [Lio95] Isabelle Liousse. Dynamique générique des feuilletages transversalement affines des surfaces. *Bull. Soc. Math. France*, 123(4):493–516, 1995.
- [LN] L.-M. Lopez and P. Narbel. Infinite interval exchange transformations from shifts. preprint, arXiv:1506.06683.
- [Mál14] A. Málaga. *Étude d’une famille de transformations préservant la mesure de  $\mathbb{Z} \times \mathbb{T}$* . PhD thesis, Université Paris Sud - Paris XI, 2014. Français.  $\uparrow$ NNT:2014PA112413 $\downarrow$ .  $\uparrow$ tel-01127218 $\downarrow$ .
- [Mas82] H. Masur. Interval exchange transformations and measured foliations. *Annals of Math.*, 115:169–200, 1982.
- [Mas86] Howard Masur. Closed trajectories for quadratic differentials with an application to billiards. *Duke Math. J.*, 53(2):307–314, 1986.
- [McM03] C. McMullen. Billiards and Teichmüller curves on Hilbert modular surfaces. *J. of Amer. Math. Soc.*, 16(4):857–885, 2003.
- [McM05] C. McMullen. Teichmüller curves in genus two: discriminant and spin. *Math. Ann.*, 333(1):87–130, 2005.
- [McM07] C. McMullen. Dynamics of  $SL_2(\mathbb{R})$  over moduli space in genus two. *Annals of Math.*, 165(2):397–456, 2007.
- [Möl09] Martin Möller. Affine groups of flat surfaces. In *Handbook of Teichmüller theory. Vol. II*, volume 13 of *IRMA Lect. Math. Theor. Phys.*, pages 369–387. Eur. Math. Soc., Zürich, 2009.
- [Möl13] Martin Möller. Teichmüller curves, mainly from the viewpoint of algebraic geometry. In *Moduli spaces of Riemann surfaces*, volume 20 of *IAS/Park City Math. Ser.*, pages 267–318. Amer. Math. Soc., Providence, RI, 2013.

- [MS02] Shigenori Matsumoto and Mitsuhiro Shishikura. Minimal sets of certain annular homeomorphisms. *Hiroshima Math. J.*, 32(2):207–215, 2002.
- [MT02] H. Masur and S. Tabachnikov. *Handbook of dynamical systems 1A*, chapter Rational billiards and flat structures, pages 289–307. Elsevier, 2002.
- [MY10] Carlos Matheus and Jean-Christophe Yoccoz. The action of the affine diffeomorphisms on the relative homology group of certain exceptionally symmetric origamis. *J. Mod. Dyn.*, 4(3):453–486, 2010.
- [Nav08] Yoav Naveh. Tight upper bounds on the number of invariant components on translation surfaces. *Israel J. Math.*, 165:211–231, 2008.
- [Ore83] Ishai Oren. Ergodicity of cylinder flows arising from irregularities of distribution. *Israel J. Math.*, 44(2):127–138, 1983.
- [Pan09] D. Panov. Foliations with unbounded deviation on  $t^2$ . *J. of Modern Dyn.*, 3:589–594, 2009.
- [Para] A. Pardo. Counting problem on wind-tree models. to appear.
- [Parb] A. Pardo. A remark on  $\mathbb{Z}^d$ -covers of veech surfaces. arXiv:1810.05257.
- [PS81] Anthony Phillips and Dennis Sullivan. Geometry of leaves. *Topology*, 20(2):209–218, 1981.
- [PSV11] Piotr Przytycki, Gabriela Schmithüsen, and Ferrán Valdez. Veech groups of Loch Ness monsters. *Ann. Inst. Fourier (Grenoble)*, 61(2):673–687, 2011.
- [Put89] Ian F. Putnam. The  $C^*$ -algebras associated with minimal homeomorphisms of the Cantor set. *Pacific J. Math.*, 136(2):329–353, 1989.
- [Put92] Ian F. Putnam.  $C^*$ -algebras arising from interval exchange transformations. *J. Operator Theory*, 27(2):231–250, 1992.
- [Ral14a] David Ralston.  $1/2$ -heavy sequences driven by rotation. *Monatsh. Math.*, 175(4):595–612, 2014.
- [Ral14b] David Ralston. Generic  $\frac{1}{2}$ -discrepancy of  $\{n\theta + x\}$ . *New York J. Math.*, 20:195–208, 2014.
- [Ran16] Anja Randecker. *Geometry and topology of wild translation surfaces*, volume 151 S. of 10. KIT Scientific publishing, 2016.
- [Ray60] Frank Raymond. The end point compactification of manifolds. *Pacific J. Math.*, 10:947–963, 1960.
- [Ric63] Ian Richards. On the classification of noncompact surfaces. *Trans. Amer. Math. Soc.*, 106:259–269, 1963.
- [Ros54] David Rosen. A class of continued fractions associated with certain properly discontinuous groups. *Duke Math. J.*, 21:549–563, 1954.
- [RT12] David Ralston and Serge Troubetzkoy. Ergodic infinite group extensions of geodesic flows on translation surfaces. *J. Mod. Dyn.*, 6(4):477–497, 2012.
- [RT13] David Ralston and Serge Troubetzkoy. Ergodicity of certain cocycles over certain interval exchanges. *Discrete Contin. Dyn. Syst.*, 33(6):2523–2529, 2013.
- [RV] C. Ramirez and F. Valdez. Veech groups of infinite genus surfaces. to appear in *Algebraic and Geometric Topology*, arXiv 0905.0871.
- [Sch78] K. Schmidt. A cylinder flow arising from irregularity of distribution. *Compositio Math.*, 36(3):225–232, 1978.
- [Sch06] Richard Evan Schwartz. Obtuse triangular billiards. I. Near the  $(2, 3, 6)$  triangle. *Experiment. Math.*, 15(2):161–182, 2006.
- [Sch09] Richard Evan Schwartz. Obtuse triangular billiards. II. One hundred degrees worth of periodic trajectories. *Experiment. Math.*, 18(2):137–171, 2009.

- [Sch11] Richard Evan Schwartz. *Mostly surfaces*, volume 60 of *Student Mathematical Library*. American Mathematical Society, Providence, RI, 2011.
- [Shi73] Paul Shields. Cutting and independent stacking of intervals. *Math. Systems Theory*, 7:1–4, 1973.
- [SPWS] J.-C. Schlage-Puchta and G. Weitze-Schmithuesen. Finite translation surfaces with maximal number of translations. preprint, arXiv:1311.7446.
- [Str84] Kurt Strebel. *Quadratic differentials*, volume 5 of *Ergebnisse der Mathematik und ihrer Grenzgebiete (3) [Results in Mathematics and Related Areas (3)]*. Springer-Verlag, Berlin, 1984.
- [Tab05] Serge Tabachnikov. *Geometry and billiards*, volume 30 of *Student Mathematical Library*. American Mathematical Society, Providence, RI; Mathematics Advanced Study Semesters, University Park, PA, 2005.
- [Thu85] W. Thurston. Minimal stretch maps between hyperbolic surfaces. 1998 eprint of 1986 preprint. See arXiv 9801039, 1985.
- [Thu88] William P. Thurston. On the geometry and dynamics of diffeomorphisms of surfaces. *Bull. Amer. Math. Soc. (N.S.)*, 19(2):417–431, 1988.
- [Thu97] William P. Thurston. *Three-dimensional geometry and topology. Vol. 1*, volume 35 of *Princeton Mathematical Series*. Princeton University Press, Princeton, NJ, 1997. Edited by Silvio Levy.
- [Tre14] Rodrigo Treviño. On the ergodicity of flat surfaces of finite area. *Geom. Funct. Anal.*, 24(1):360–386, 2014.
- [Tro86] Marc Troyanov. Les surfaces euclidiennes à singularités coniques. *Enseign. Math. (2)*, 32(1-2):79–94, 1986.
- [Tro10] Serge Troubetzkoy. Typical recurrence for the Ehrenfest wind-tree model. *J. Stat. Phys.*, 141(1):60–67, 2010.
- [Val09a] F. Valdez. Billiards in polygons and homogeneous foliations on  $\mathbb{C}^2$ . *Erg. Th. and Dyn. Syst.*, 29:255–271, 2009.
- [Val09b] Ferrán Valdez. Infinite genus surfaces and irrational polygonal billiards. *Geom. Dedicata*, 143:143–154, 2009.
- [Val12] Ferrán Valdez. Veech groups, irrational billiards and stable abelian differentials. *Discrete Contin. Dyn. Syst.*, 32(3):1055–1063, 2012.
- [Vee82] W. A. Veech. Gauss measures for transformations on the space of interval exchange maps. *Annals of Math.*, 115:201–242, 1982.
- [Vee89] W. Veech. Teichmüller curves in the moduli space, Eisenstein series and an application to triangular billiards. *Invent. Math.*, 97:533–683, 1989.
- [Ver82] A. M. Veršik. A theorem on periodical Markov approximation in ergodic theory. In *Ergodic theory and related topics (Vitte, 1981)*, volume 12 of *Math. Res.*, pages 195–206. Akademie-Verlag, Berlin, 1982.
- [Vor96] Ya. B. Vorobets. Ergodicity of billiards in polygons: explicit examples. *Uspekhi Mat. Nauk*, 51(4(310)):151–152, 1996.
- [Vor97] Ya. B. Vorobets. Ergodicity of billiards in polygons. *Mat. Sb.*, 188(3):65–112, 1997.
- [Woe00] Wolfgang Woess. *Random walks on infinite graphs and groups*, volume 138 of *Cambridge Tracts in Mathematics*. Cambridge University Press, Cambridge, 2000.
- [Wri15] Alex Wright. Translation surfaces and their orbit closures: an introduction for a broad audience. *EMS Surv. Math. Sci.*, 2(1):63–108, 2015.

- [Yoc10] Jean-Christophe Yoccoz. Interval exchange maps and translation surfaces. In *Homogeneous flows, moduli spaces and arithmetic*, volume 10 of *Clay Math. Proc.*, pages 1–69. Amer. Math. Soc., Providence, RI, 2010.
- [Zim78] Robert J. Zimmer. Amenable ergodic group actions and an application to Poisson boundaries of random walks. *J. Functional Analysis*, 27(3):350–372, 1978.
- [ZK75] A. N. Zemljakov and A. B. Katok. Topological transitivity of billiards in polygons. *Mat. Zametki*, 18(2):291–300, 1975.
- [ZK76] A. N. Zemljakov and A. B. Katok. Letter to the editors: “Topological transitivity of billiards in polygons” (*Mat. Zametki* **18** (1975), no. 2, 291–300). *Mat. Zametki*, 20(6):883, 1976.
- [Zor97] A. Zorich. Deviation for interval exchange transformations. *Erg. Th. and Dyn. Syst.*, 17(6):1477–1499, 1997.
- [Zor06] A. Zorich. *Flat surfaces*. Springer, 2006. in ”Frontiers in Number Theory, Physics and Geometry. Volume 1: On random matrices , zeta functions and dynamical systems”.