

Gibbs states in statistical mechanics and dynamical systems Makhmudov. M.

Citation

Makhmudov, M. (2025, September 2). *Gibbs states in statistical mechanics and dynamical systems*. Retrieved from https://hdl.handle.net/1887/4259377

Version: Publisher's Version

Licence agreement concerning inclusion of doctoral

License: thesis in the Institutional Repository of the University of

Leiden

Downloaded from: https://hdl.handle.net/1887/4259377

Note: To cite this publication please use the final published version (if applicable).

Bibliography

- [1] Luis Barreira, Nonadditive thermodynamic formalism: equilibrium and Gibbs measures, Discrete Contin. Dyn. Syst. 16 (2006), no. 2, 279–305, DOI 10.3934/dcds.2006.16.279. MR2226481
- [2] Luis Barreira and Paulo Doutor, *Almost additive multifractal analysis*, J. Math. Pures Appl. (9) **92** (2009), no. 1, 1–17, DOI 10.1016/j.matpur.2009.04.006 (English, with English and French summaries). MR2541145
- [3] Luis Barreira, Yakov Pesin, and Jörg Schmeling, On a general concept of multifractality: multifractal spectra for dimensions, entropies, and Lyapunov exponents. Multifractal rigidity, Chaos 7 (1997), no. 1, 27–38, DOI 10.1063/1.166232. MR1439805
- [4] Roberto Benzi, Giovanni Paladin, Giorgio Parisi, and Angelo Vulpiani, On the multifractal nature of fully developed turbulence and chaotic systems, J. Phys. A 17 (1984), no. 18, 3521–3531. MR772338
- [5] A. S. Besicovitch, On the sum of digits of real numbers represented in the dyadic system, Math. Ann. 110 (1935), no. 1, 321–330, DOI 10.1007/BF01448030. MR1512941
- [6] Thiago Bomfim and Paulo Varandas, *Multifractal analysis of the irregular set for almost-additive sequences via large deviations*, Nonlinearity **28** (2015), no. 10, 3563–3585.
- [7] Rufus Bowen, *Topological entropy for noncompact sets*, Trans. Amer. Math. Soc. **184** (1973), 125–136.
- [8] M. Brin and A. Katok, On local entropy, Geometric dynamics (Rio de Janeiro, 1981), Lecture Notes in Math., vol. 1007, Springer, Berlin, 1983, pp. 30–38.
- [9] Jean-René Chazottes and Eric Olivier, *Relative entropy, dimensions and large deviations for g-measures*, J. Phys. A **33** (2000), no. 4, 675–689.
- [10] Vaughn Climenhaga, Topological pressure of simultaneous level sets, Nonlinearity 26 (2013), no. 1, 241–268, DOI 10.1088/0951-7715/26/1/241. MR3001770
- [11] P. Collet, J. L. Lebowitz, and A. Porzio, *The dimension spectrum of some dynamical systems*, Proceedings of the symposium on statistical mechanics of phase transitions—mathematical and physical aspects (Trebon, 1986), 1987, pp. 609–644, DOI 10.1007/BF01206149. MR912493
- [12] Noé Cuneo, Additive, almost additive and asymptotically additive potential sequences are equivalent, Comm. Math. Phys. 377 (2020), no. 3, 2579–2595, DOI 10.1007/s00220-020-03780-7. MR4121627
- [13] Noé Cuneo, Vojkan Jakšić, Claude-Alain Pillet, and Armen Shirikyan, *Fluctuation Theorem and Thermodynamic Formalism*, arxiv:1712.05167 (2018).
- [14] Amir Dembo and Ofer Zeitouni, Large deviations techniques and applications, Stochastic Modelling and Applied Probability, vol. 38, Springer-Verlag, Berlin, 2010. Corrected reprint of the second (1998) edition.

- [15] H. G. Eggleston, *The fractional dimension of a set defined by decimal properties*, Quart. J. Math. Oxford Ser. **20** (1949), 31–36, DOI 10.1093/qmath/os-20.1.31. MR31026
- [16] Richard S. Ellis, Entropy, large deviations, and statistical mechanics, Classics in Mathematics, Springer-Verlag, Berlin, 2006. Reprint of the 1985 original. MR2189669
- [17] Zafer Ercan, Extension and separation of vector valued functions, Turkish J. Math. 21 (1997), no. 4, 423–430. MR1621434
- [18] Ai Hua Fan, Multifractal analysis of infinite products, J. Statist. Phys. 86 (1997), no. 5-6, 1313–1336, DOI 10.1007/BF02183625. MR1450768
- [19] Aihua Fan, Multifractal analysis of weighted ergodic averages, Adv. Math. 377 (2021), Paper No. 107488, 34.
- [20] Ai Hua Fan and De Jun Feng, Analyse multifractale de la récurrence sur l'espace symbolique, C. R. Acad. Sci. Paris Sér. I Math. 327 (1998), no. 7, 629–632 (French, with English and French summaries).
- [21] Ai-Hua Fan and De-Jun Feng, On the distribution of long-term time averages on symbolic space, J. Statist. Phys. **99** (2000), no. 3-4, 813–856.
- [22] Ai-Hua Fan, De-Jun Feng, and Jun Wu, *Recurrence, dimension and entropy*, J. London Math. Soc. (2) **64** (2001), no. 1, 229–244.
- [23] De-Jun Feng, Lyapunov exponents for products of matrices and multifractal analysis. I. Positive matrices, Israel J. Math. 138 (2003), 353–376, DOI 10.1007/BF02783432. MR2031963
- [24] _____, Lyapunov exponents for products of matrices and multifractal analysis. II. General matrices, Israel J. Math. 170 (2009), 355–394, DOI 10.1007/s11856-009-0033-x. MR2506331
- [25] De-Jun Feng and Wen Huang, Lyapunov spectrum of asymptotically sub-additive potentials, Comm. Math. Phys. 297 (2010), no. 1, 1–43, DOI 10.1007/s00220-010-1031-x. MR2645746
- [26] ______, Variational principles for topological entropies of subsets, J. Funct. Anal. 263 (2012), no. 8, 2228–2254, DOI 10.1016/j.jfa.2012.07.010. MR2964682
- [27] De-Jun Feng and Ka-Sing Lau, *The pressure function for products of non-negative matrices*, Math. Res. Lett. **9** (2002), no. 2-3, 363–378, DOI 10.4310/MRL.2002.v9.n3.a10. MR1909650
- [28] Frisch U and Parisi G, On the singularity structure of fully developed turbulence, Turbulence and Predictability of Geophysical Flows and Climate Dynamics, Varenna Summer School LXXXVIII (1983), 84–87.
- [29] Godofredo Iommi and Thomas Jordan, Multifractal analysis for quotients of Birkhoff sums for countable Markov maps, Int. Math. Res. Not. IMRN 2 (2015), 460–498, DOI 10.1093/imrn/rnt204. MR3340327
- [30] Ji-Hua Ma and Zhi-Ying Wen, A Billingsley type theorem for Bowen entropy, C. R. Math. Acad. Sci. Paris 346 (2008), no. 9-10, 503–507, DOI 10.1016/j.crma.2008.03.010 (English, with English and French summaries). MR2412786
- [31] Eric Olivier, *Analyse multifractale de fonctions continues*, C. R. Acad. Sci. Paris Sér. I Math. **326** (1998), no. 10, 1171–1174 (French, with English and French summaries).
- [32] ______, Multifractal analysis in symbolic dynamics and distribution of pointwise dimension for g-measures, Nonlinearity 12 (1999), no. 6, 1571–1585.
- [33] ______, Dimension de Billingsley d'ensembles saturés, C. R. Acad. Sci. Paris Sér. I Math. **328** (1999), no. 1, 13–16 (French, with English and French summaries).
- [34] _______, Structure multifractale d'une dynamique non expansive définie sur un ensemble de Cantor, C. R. Acad. Sci. Paris Sér. I Math. **331** (2000), no. 8, 605–610 (French, with English and French summaries).

- [35] Lars Olsen, A Multifractal Formalism, Advances in Mathematics 116 (1995), no. 1, 82-196.
- [36] ______, Multifractal dimensions of product measures, Mathematical Proceedings of the Cambridge Philosophical Society **120** (1996), no. 4, 709–734.
- [37] ______, Dimensions of overlaps of self-similar fractals and self-similar multifractals, Indiana University Mathematics Journal 51 (2002), no. 6, 1461-1478.
- [38] ______, Multifractal analysis of divergence points of deformed measure theoretical Birkhoff averages, J. Math. Pures Appl. (9) 82 (2003), no. 12, 1591–1649, DOI 10.1016/j.matpur.2003.09.007 (English, with English and French summaries). MR2025314
- [39] ______, Multifractal analysis of divergence points of deformed measure theoretical Birkhoff averages. IV. Divergence points and packing dimension, Bull. Sci. Math. 132 (2008), no. 8, 650–678, DOI 10.1016/j.bulsci.2008.08.002. MR2474486
- [40] Lars Olsen and S. Winter, Multifractal analysis of divergence points of deformed measure theoretical Birkhoff averages. II. Non-linearity, divergence points and Banach space valued spectra, Bull. Sci. Math. 131 (2007), no. 6, 518–558, DOI 10.1016/j.bulsci.2006.05.005. MR2351308
- [41] Yakov B. Pesin, *Dimension theory in dynamical systems*, Chicago Lectures in Mathematics, University of Chicago Press, Chicago, IL, 1997. Contemporary views and applications.
- [42] Ya. B. Pesin and B. S. Pitskel', Topological pressure and the variational principle for noncompact sets, Funktsional. Anal. i Prilozhen. 18 (1984), no. 4, 50–63, 96 (Russian, with English summary). MR775933
- [43] Yakov B. Pesin and Howard Weis, *The Multifractal Analysis of Birkhoff Averages and Large Deviations* (2001), 464. Global Analysis of Dynamical Systems, edited by H.W Broer, B Krauskopf, Gert Vegter.
- [44] Thomas Prellberg and Joseph Slawny, *Maps of intervals with indifferent fixed points: thermo-dynamic formalism and phase transitions*, J. Statist. Phys. **66** (1992), no. 1-2, 503–514, DOI 10.1007/BF01060077. MR1149493
- [45] R. Tyrrell Rockafellar, Convex analysis, Princeton Landmarks in Mathematics, Princeton University Press, Princeton, NJ, 1997. Reprint of the 1970 original; Princeton Paperbacks. MR1451876
- [46] Floris Takens and Evgeny Verbitski, Multifractal analysis of local entropies for expansive homeomorphisms with specification, Comm. Math. Phys. 203 (1999), no. 3, 593–612.
- [47] ______, General multifractal analysis of local entropies, Fund. Math. 165 (2000), no. 3, 203–237, DOI 10.4064/fm-165-3-203-237. MR1805425
- [48] Floris Takens and Evgeny Verbitskiy, On the variational principle for the topological entropy of certain non-compact sets, Ergodic Theory Dynam. Systems 23 (2003), no. 1, 317–348.
- [49] Mariusz Urbański, Parabolic Cantor sets, Fund. Math. 151 (1996), no. 3, 241-277. MR1424576
- [50] Peter Walters, Convergence of the Ruelle operator for a function satisfying Bowen's condition, Trans. Amer. Math. Soc. **353** (2001), no. 1, 327–347.
- [51] Lai-Sang Young, Large deviations in dynamical systems, Trans. Amer. Math. Soc. 318 (1990), no. 2, 525–543.
- [52] Yun Zhao, Libo Zhang, and Yongluo Cao, The asymptotically additive topological pressure on the irregular set for asymptotically additive potentials, Nonlinear Anal. 74 (2011), no. 15, 5015– 5022, DOI 10.1016/j.na.2011.04.065. MR2810684