Gibbs processes and applications

Berghout, S.

Bibliography

[1] M. Aizenman, J. T. Chayes, L. Chayes, and C.M. Newman, *Discontinuity of the magnetization in one-dimensional* $1/|x-y|^2$ *Ising and Potts models*, J. Statist. Phys. **50** (1988), no. 1-2, 1–40.

[2] Sebastián Barbieri, Ricardo Gomez, Brian Marcus, Tom Meyerovitch, and Siamak Taati, *Gibbsian representations of continuous specifications: the theorems of Kozlov and Sullivan revisited*, ArXiv (2020).

[3] Leonard E. Baum and Ted Petrie, *Statistical Inference for Probabilistic Functions of Finite State Markov Chains*, Ann. Math. Statist. **37** (1966), no. 6, 1554–1563.

[4] Ron Begleiter, Ran El-Yaniv, and Golan Yona, *On prediction using variable order Markov models*, J. Artificial Intelligence Res. **22** (2004), 385–421 (electronic).

[5] Henry Berbee, *Chains with infinite connections: Uniqueness and Markov representation*, Probability Theory and Related Fields **76** (1987), no. 2, 243–253.

[6] Rodrigo Bissacot, Eric Endo, Aernout van Enter, and Arnaud Le Ny, *Entropic repulsion and lack of the g-measure property for Dyson models*, Communications in Mathematical Physics **363** (2018), 767–788.

[7] David Blackwell, *The entropy of functions of finite-state Markov chains*, Transactions of the first Prague conference on information theory, Statistical decision functions, random processes held at Liblice near Prague from November 28 to 30, 1956, 1957, pp. 13–20.

[8] Thomas Bogenschütz and Volker Mathias Gundlach, *Ruelle's transfer operator for random subshifts of finite type*, Ergodic Theory and Dynamical Systems **15** (1995), no. 3, 413–447.

[9] Thierry Bousch, *La condition de Walters*, Annales scientifiques de l'Ecole normale supérieure, 2001, pp. 287–311.

[10] Thierry Bousch and Oliver Jenkinson, *Cohomology classes of dynamically non-negative* C^k *functions*, Invent. Math. **148** (2002), no. 1, 207–217.

[11] Rufus Bowen, *Some systems with unique equilibrium states*, Math. Systems Theory **8** (1974/75), no. 3, 193–202.

[12] Maury Bramson and Steven Kalikow, *Nonuniqueness in g-functions*, Israel J. Math. **84** (1993), no. 1-2, 153–160.

[13] Peter Bühlmann and Abraham J. Wyner, *Variable length Markov chains*, Ann. Statist. **27** (1999), no. 2, 480–513, DOI 10.1214/aos/1018031204.

[14] C. J. Burke and M. Rosenblatt, *A Markovian Function of a Markov Chain*, Ann. Math. Statist. **29** (1958), no. 4, 1112–1122.

[15] John L. Cardy, *Scaling and renormalization in statistical physics*, Cambridge lecture notes in physics, Cambridge University Press, Cambridge, 1996.

[16] J.-R. Chazottes and E. Ugalde, *Projection of Markov measures may be Gibbsian*, J. Statist. Phys. **111** (2003), no. 5-6, 1245–1272.

[17] Cleary J. and Witten I., *Data Compression Using Adaptive Coding and Partial String Matching*, IEEE Transactions on Communications **32** (1984), no. 4, 396-402, DOI 10.1109/TCOM.1984.1096090.

[18] Zaqueu Coelho and Anthony N. Quas, *Criteria for $\overline{d}$-continuity*, Trans. Amer. Math. Soc. **350** (1998), no. 8, 3257–3268.

[19] Manfred Denker and Mikhail Gordin, *Gibbs measures for fibred systems*, Adv. Math. **148** (1999), no. 2, 161–192.

[20] E. I. Dinaburg, *A correlation between topological entropy and metric entropy*, Dokl. Akad. Nauk SSSR **190** (1970), 19–22 (Russian).

[21] R. L. Dobrushin, *Description of a random field by means of conditional probabilities and conditions for its regularity*, Teor. Verojatnost. i Primenen **13** (1968), 201–229 (Russian, with English summary).

[22] _____, *Gibbsian random fields for lattice systems with pairwise interactions.*, Funkcional. Anal. i Priložen. **2** (1968), no. 4, 31–43 (Russian).

[23] _____, *Lecture given at the workshop "Probability and Physics"*, 1995. Renkum, Holland.

[24] R. L. Dobrushin and S. B. Shlosman, *Gibbsian description of 'non-Gibbsian' fields*, Russian Mathematical Surveys **52** (1997), no. 2, 285.

[25] E. B. Dynkin, *Markov processes*, Gosudarstv. Izdat. Fiz.-Mat. Lit., Moscow, 1963.

[26] Sergio Verdú and Tsachy Weissman, *The information lost in erasures*, IEEE Trans. Inform. Theory **54** (2008), no. 11, 5030–5058.

[27] Ai Hua Fan and Mark Pollicott, *Non-homogeneous equilibrium states and convergence speeds of averaging operators*, Math. Proc. Cambridge Philos. Soc. **129** (2000), no. 1, 99–115.

[28] M. Feder and N. Merhav, *Relations between entropy and error probability*, IEEE Transactions on Information Theory **40** (1994), no. 1, 259-266, DOI 10.1109/18.272494.

[29] Roberto Fernández and Grégory Maillard, *Chains with complete connections and one-dimensional Gibbs measures*, Electron. J. Probab. **9** (2004), no. 6, 145–176 (electronic).

[30] R. Fernández and G. Maillard, *Chains and specifications*, Markov Process. Related Fields **10** (2004), no. 3, 435–456.

[31] Roberto Fernández and Grégory Maillard, *Chains with complete connections: general theory, uniqueness, loss of memory and mixing properties*, J. Stat. Phys. **118** (2005), no. 3-4, 555–588.

[32] F. Fernández, A. Viola, and M. J. Weinberger, *Efficient Algorithms for Constructing Optimal Bi-directional Context Sets*, 2010 Data Compression Conference, 2010, pp. 179-188, DOI 10.1109/DCC.2010.23.

[33] Roberto Fernández, Sandro Gallo, and Grégory Maillard, *Regular g-measures are not always Gibbsian*, Electron. Commun. Probab. **16** (2011), 732–740.

[34] Harry Furstenberg, *PREDICTION THEORY*, ProQuest LLC, Ann Arbor, MI, 1958. Thesis (Ph.D.)–Princeton University.

[35] Christophe Gallesco and Daniel Y. Takahashi, *Mixing rates for potentials of non-summable variations*, arXiv (2020).

[36] A. Galves and E. Löcherbach, *Stochastic chains with memory of variable length.*, TICSP Series **38** (2008), 117-133.

[37] Hans-Otto Georgii, *Stochastische Felder und ihre Anwendung auf Interaktionssysteme*, Inst. für Angewandte Math., 1974.

[38] T. N. T. Goodman, *Relating topological entropy and measure entropy*, Bull. London Math. Soc. **3** (1971), 176–180.

[39] Robert B. Griffiths and Paul A. Pearce, *Position-Space Renormalization-Group Transformations: Some Proofs and Some Problems*, Phys. Rev. Lett. **41** (1978), 917–920.

[40] ———, *Mathematical properties of position-space renormalization-group transformations*, J. Statist. Phys. **20** (1979), no. 5, 499–545.

[41] Robert B. Griffiths, *Mathematical properties of renormalization-group transformations*, Phys. A **106** (1981), no. 1-2, 59–69 (English, with French summary). Statphys 14 (Proc. Fourteenth Internat. Conf. Thermodynamics and Statist. Mech., Univ. Alberta, Edmonton, Alta., 1980).

[42] Leonid Gurvits and James Ledoux, *Markov property for a function of a Markov chain: A linear algebra approach*, Linear Algebra and its Applications **404** (2005), 85 - 117.

[43] Olle Häggström, *Is the fuzzy Potts model Gibbsian?*, Ann. Inst. H. Poincaré Probab. Statist. **39** (2003), no. 5, 891–917.

[44] Karl Haller and Tom Kennedy, *Absence of renormalization group pathologies near the critical temperature. Two examples*, Journal of Statistical Physics **85** (1996), no. 5, 607–637.

[45] T. E. Harris, *On chains of infinite order*, Pacific J. Math. **5** (1955), 707–724.

[46] Paul Hulse, *An example of non-unique g-measures*, Ergodic Theory Dynam. Systems **26** (2006), no. 2, 439–445.

[47] R. B. Israel, *Banach algebras and Kadanoff transformations.*, Random Fields **II** (1981), 593–608.

[48] Anders Johansson and Anders Öberg, *Square summability of variations of g-functions and uniqueness of g-measure*, Math. res. Lett. **10** (2003), 587-601.

[49] Anders Johansson, Anders Öberg, and Mark Pollicott, *Phase transitions in long-range Ising models and an optimal condition for factors of g -measures*, Ergodic Theory and Dynamical Systems, 1–14.

[50] Steve Kalikow, *Random Markov processes and uniform martingales*, Israel J. Math. **71** (1990), no. 1, 33–54.

[51] Michael Keane, *Strongly mixing g-measures*, Invent. Math. **16** (1972), 309–324.

[52] John G. Kemeny and J. Laurie Snell, *Finite Markov chains*, The University Series in Undergraduate Mathematics, D. Van Nostrand Co., Inc., Princeton, N.J.-Toronto-London-New York, 1960.

[53] Thomas M. W. Kempton, *Factors of Gibbs measures for subshifts of finite type*, Bull. Lond. Math. Soc. **43** (2011), no. 4, 751–764.

[54] Bruce Kitchens and Selim Tuncel, *Finitary measures for subshifts of finite type and sofic systems*, Mem. Amer. Math. Soc. **58** (1985), no. 338, iv+68.

[55] O. K. Kozlov, *A Gibbs description of a system of random variables*, Problemy Peredači Informacii **10** (1974), no. 3, 94–103 (Russian).

[56] O. E. Lanford III and D. Ruelle, *Observables at infinity and states with short range correlations in statistical mechanics*, Comm. Math. Phys. **13** (1969), 194–215.

[57] Oscar E. Lanford, *Statistical Mechanics and Mathematical Problems* (A. Lenard, ed.), Springer Berlin Heidelberg, Berlin, Heidelberg, 1973.

[58] G. Langdon, *A note on the Ziv - Lempel model for compressing individual sequences (Corresp.)*, IEEE Transactions on Information Theory **29** (1983), no. 2, 284-287, DOI 10.1109/TIT.1983.1056645.

[59] François Ledrappier, *Principe variationnel et systèmes dynamiques symboliques*, Z. Wahrscheinlichkeitstheorie und Verw. Gebiete **30** (1974), 185–202.

[60] Francois Ledrappier and Peter Walters, *A relativised variational principle for continuous transformations*, J. London Math. Soc. (2) **16** (1977), no. 3, 568–576.

[61] Jacob Ziv and Abraham Lempel, *Compression of individual sequences via variable-rate coding*, IEEE Trans. Inform. Theory **24** (1978), no. 5, 530–536.

[62] József Lőrinczi, Christian Maes, and Koen Vande Velde, *Transformations of Gibbs measures*, Probab. Theory Related Fields **112** (1998), no. 1, 121–147, DOI 10.1007/s004400050185. MR1646444

[63] Christian Maes and Koen Vande Velde, *The fuzzy Potts model*, J. Phys. A **28** (1995), no. 15, 4261–4270.

[64] Brian Marcus, Karl Petersen, and Susan Williams, *Transmission rates and factors of Markov chains*, Conference in modern analysis and probability (New Haven, Conn., 1982), Contemp. Math., vol. 26, Amer. Math. Soc., Providence, RI, 1984, pp. 279–293.

[65] A. Moffat and R. Neal, *Arithmetic Coding Revisited*, Proceedings of the Conference on Data Compression, 1995, pp. 202–.

[66] S. Dachian and B. S. Nahapetian, *Description of specifications by means of probability distributions in small volumes under condition of very weak positivity*, J. Statist. Phys. **117** (2004), no. 1-2, 281–300.

[67] J. von Neumann, *Zur Operatorenmethode in der klassischen Mechanik*, Ann. of Math. (2) **33** (1932), no. 3, 587–642.

[68] Mordechai Nisenson, Ido Yariv, Ran El-Yaniv, and Ron Meir, *Towards Behaviometric Security Systems: Learning to Identify a Typist* (Nada Lavrač, Dragan Gamberger, Ljupčo Todorovski, and Hendrik Blockeel, eds.), Springer Berlin Heidelberg, Berlin, Heidelberg, 2003.

[69] O. Onicescu and G. Mihoc, *Sur les chaines statistiques*, C. R. Acad. Sci. Paris **200** (1935), 511-512.

[70] Lars Onsager, *Crystal statistics. I. A two-dimensional model with an order-disorder transition*, Phys. Rev. (2) **65** (1944), 117–149.

[71] E. Ordentlich, M. J. Weinberger, and T. Weissman, *Efficient pruning of bi-directional context trees with applications to universal denoising and compression*, 2004.

[72] E. Ordentlich, M. J. Weinberger, and T. Weissman, *Multi-directional context sets with applications to universal denoising and compression*, Proceedings. International Symposium on Information Theory, 2005. ISIT 2005., 2005, pp. 1270-1274, DOI 10.1109/ISIT.2005.1523546.

[73] E. Ordentlich, M. J. Weinberger, and C. Chang, *On Multi-Directional Context Sets*, IEEE Transactions on Information Theory **57** (2011), no. 10, 6827-6836, DOI 10.1109/TIT.2011.2165818.

[74] Marion Rachel Palmer, William Parry, and Peter Walters, *Large sets of endomorphisms and of g-measures*, The structure of attractors in dynamical systems (Proc. Conf., North Dakota State Univ., Fargo, N.D., 1977), Lecture Notes in Math., vol. 668, Springer, Berlin, 1978, pp. 191–210.

[75] Jorma Rissanen, *A universal data compression system*, IEEE Trans. Inform. Theory **29** (1983), no. 5, 656–664.

[76] Dana Ron, Yoram Singer, and Naftali Tishby, *The power of amnesia: Learning probabilistic automata with variable memory length*, Machine Learning **25** (1996), no. 2, 117–149, DOI 10.1007/BF00114008.

[77] David Ruelle, *Thermodynamic formalism*, Encyclopedia of Mathematics and its Applications, vol. 5, Addison-Wesley Publishing Co., Reading, Mass., 1978. The mathematical structures of classical equilibrium statistical mechanics; With a foreword by Giovanni Gallavotti and Gian-Carlo Rota.

[78] Douglas Lind and Brian Marcus, *An introduction to symbolic dynamics and coding*, Cambridge University Press, Cambridge, 1995.

[79] Brian Marcus, *Symbolic dynamics and connections to coding theory, automata theory and system theory*, Different aspects of coding theory (San Francisco, CA, 1995), Proc. Sympos. Appl. Math., vol. 50, Amer. Math. Soc., Providence, RI, 1995, pp. 95–108.

[80] Ja. G. Sinaĭ, *Gibbs measures in ergodic theory*, Uspehi Mat. Nauk **27** (1972), no. 4(166), 21–64 (Russian).

[81] Aernout C. D. van Enter, Roberto Fernández, and Alan D. Sokal, *Regularity properties and pathologies of position-space renormalization-group transformations: scope and limitations of Gibbsian theory*, J. Statist. Phys. **72** (1993), no. 5-6, 879–1167.

[82] Wolfgang Stadje, *The evolution of aggregated Markov chains*, Statistics & Probability Letters **74** (2005), no. 4, 303 - 311.

[83] Örjan Stenflo, *Uniqueness in g-measures*, Nonlinearity **16** (2002), 403.

[84] W. G. Sullivan, *Potentials for almost Markovian random fields*, Comm. Math. Phys. **33** (1973), 61–74.

[85] Tue Tjur, *Conditional probability distributions*, Institute of Mathematical Statistics, University of Copenhagen, Copenhagen, 1974. Lecture Notes, No. 2.

[86] ———, *A Constructive Definition of Conditional Distributions*, Preprint, Institute of Mathematical Statistics, University of Copenhagen, 1975.

[87] Evgeny Verbitskiy, *On factors of g-measures*, Indag. Math. (N.S.) **22** (2011), no. 3-4, 315–329.

[88] ———, *Thermodynamics of the binary symmetric channel*, Pacific Journal of Mathematics for Industry **8** (2016), no. 1, 2, DOI 10.1186/s40736-015-0021-5.

[89] P. Volf, *Weighting Techniques in Data Compression Theory and Algorithms*, Technische Universiteit Eindhoven, 2002. Ph.D. thesis.

[90] Peter Walters, *Ruelle's Operator Theorem and g-Measures*, Transactions of the American Mathematical Society **214** (1975), 375–387.

[91] Peter Walters, *Invariant measures and equilibrium states for some mappings which expand distances*, Trans. Amer. Math. Soc. **236** (1978), 121–153.

[92] ———, *An introduction to ergodic theory*, Graduate Texts in Mathematics, vol. 79, Springer-Verlag, New York-Berlin, 1982.

[93] ———, *Relative pressure, relative equilibrium states, compensation functions and many-to-one codes between subshifts*, Trans. Amer. Math. Soc. **296** (1986), no. 1, 1–31.

[94] ———, *Erratum: "A necessary and sufficient condition for a two-sided continuous function to be cohomologous to a one-sided continuous function"*, Dyn. Syst. **18** (2003), no. 3, 271–278.

[95] ———, *Regularity conditions and Bernoulli properties of equilibrium states and g-measures*, J. London Math. Soc. (2) **71** (2005), no. 2, 379–396.

[96] ———, *A natural space of functions for the Ruelle operator theorem*, Ergodic Theory Dynam. Systems **27** (2007), no. 4, 1323–1348.

[97] T. Weissman, E. Ordentlich, G. Seroussi, S. Verdu, and M. J. Weinberger, *Universal discrete denoising: known channel*, IEEE Transactions on Information Theory **51** (2005), no. 1, 5-28.

[98] F. M. J. Willems, Y. M. Shtarkov, and T. J. Tjalkens, *The context-tree weighting method: basic properties*, IEEE Transactions on Information Theory **41** (1995), no. 3, 653-664, DOI 10.1109/18.382012.

[99] Jisang Yoo, *On Factor Maps that Send Markov Measures to Gibbs Measures*, Journal of Statistical Physics **141** (2010), no. 6, 1055–1070.

[100] J. Yu and S. Verdu, *Schemes for Bidirectional Modeling of Discrete Stationary Sources*, IEEE Transactions on Information Theory **52** (2006), no. 11, 4789-4807.

[101] Jiming Yu, *Bidirectional modeling of finite -alphabet sources*, 2007 (English).

[102] Michiko Yuri, *Zeta functions for certain non-hyperbolic systems and topological Markov approximations*, Ergodic Theory Dynam. Systems **18** (1998), no. 6, 1589–1612.