

Xi, W.; Shlossberg, M.; Toller, D.

Algebraic entropy on topologically quasihamiltonian groups. (English) Zbl 1439.54011

Topology Appl. 272, Article ID 107093, 24 p. (2020).

Summary: We study the algebraic entropy of continuous endomorphisms of compactly covered, locally compact, topologically quasihamiltonian groups. We provide a Limit-free formula which helps us to simplify the computations of this entropy. Moreover, several Addition Theorems are given. In particular, we prove that the Addition Theorem holds for every group endomorphism of a quasihamiltonian torsion FC-group (e.g., a Hamiltonian group).

MSC:

54C70 Entropy in general topology

54H11 Topological groups (topological aspects)

37A35 Entropy and other invariants, isomorphism, classification in ergodic theory

22D40 Ergodic theory on groups

28D20 Entropy and other invariants

20K35 Extensions of abelian groups

Cited in 1 Document

Keywords:

algebraic entropy; addition theorem; (topologically) quasihamiltonian group; Hamiltonian group; compactly covered group

Full Text: [DOI](#)

References:

- [1] Adler, R. L.; Konheim, A. G.; McAndrew, M. H., Topological entropy, *Trans. Am. Math. Soc.*, 114, 309-319 (1965) · [Zbl 0127.13102](#)
- [2] Bagley, R. W.; Wu, T. S.; Yang, J. S., On the structure of locally compact topological groups, *Math. Scand.*, 71, 145-160 (1992) · [Zbl 0784.22002](#)
- [3] Castellano, I.; Giordano Bruno, A., Algebraic Entropy in Locally Linearly Compact Vector Spaces, Rings, Polynomials, and Modules, 103-127 (2017), Springer: Springer Cham · [Zbl 1391.37005](#)
- [4] Dikranjan, D.; Giordano Bruno, A., Topological entropy and algebraic entropy for group endomorphisms, (Proceedings ICTA2011 Islamabad. Proceedings ICTA2011 Islamabad, Pakistan July 4-10 2011 (2012), Cambridge Scientific Publishers), 133-214 · [Zbl 1300.54002](#)
- [5] Dikranjan, D.; Giordano Bruno, A., Discrete dynamical systems in group theory, *Note Mat.*, 33, 1-48 (2013) · [Zbl 1280.37023](#)
- [6] Dikranjan, D.; Giordano Bruno, A., The Bridge Theorem for totally disconnected LCA groups, *Topol. Appl.*, 169, 21-32 (2014) · [Zbl 1322.37007](#)
- [7] Dikranjan, D.; Giordano Bruno, A., Entropy on abelian groups, *Adv. Math.*, 298, 612-653 (2016) · [Zbl 1368.37015](#)
- [8] Dikranjan, D.; Goldsmith, B.; Salce, L.; Zanardo, P., Algebraic entropy of endomorphisms of abelian groups, *Trans. Am. Math. Soc.*, 361, 3401-3434 (2009) · [Zbl 1176.20057](#)
- [9] A. Giordano Bruno, F. Salizzoni, Additivity of the algebraic entropy for locally finite groups with permutable finite subgroups, submitted for publication.
- [10] Giordano Bruno, A.; Shlossberg, M.; Toller, D., Algebraic entropy on strongly compactly covered groups, *Topol. Appl.*, 263, 117-140 (2019) · [Zbl 1429.37006](#)
- [11] Giordano Bruno, A.; Spiga, P., Some properties of the growth and of the algebraic entropy of group endomorphisms, *J. Group Theory*, 20, 4, 763-774 (2017) · [Zbl 1401.20041](#)
- [12] Giordano Bruno, A.; Spiga, P., Milnor-Wolf Theorem for the growth of group endomorphisms, *J. Algebra*, 546, 85-118 (2020) · [Zbl 07148868](#)
- [13] Giordano Bruno, A.; Virili, S., Topological entropy in totally disconnected locally compact groups, *Ergod. Theory Dyn. Syst.*, 37, 7, 2163-2186 (2017) · [Zbl 1380.37032](#)
- [14] Gromov, M., Groups of polynomial growth and expanding maps, *Publ. Math. IHES*, 53, 53-73 (1981) · [Zbl 0474.20018](#)
- [15] Herfort, W.; Hofmann, K. H.; Russo, F. G., Periodic Locally Compact Groups. A Study of a Class of Totally Disconnected Topological Groups, *Studies in Mathematics*, vol. 71 (2019), De Gruyter: De Gruyter Berlin-Boston · [Zbl 1423.22001](#)
- [16] Herfort, W.; Hofmann, K. H.; Russo, F. G., A study in locally compact groups

- [17] Hewitt, E.; Ross, K. A., *Abstract Harmonic Analysis I* (1963), Springer-Verlag: Springer-Verlag Berlin-Heidelberg-New York · [Zbl 0115.10603](#)
- [18] Iwasawa, K., On the structure of infinite M-groups, *Jpn. J. Math.*, 18, 709-728 (1943) · [Zbl 0061.02504](#)
- [19] Kümmich, F., Topologische quasihamiltonsche Gruppen, *Arch. Math.*, 29, 392-397 (1977), (in German) · [Zbl 0383.22001](#)
- [20] Mukhin, Yu. N., Topologically quasi-Hamiltonian groups, (*Problems in Algebra*, vol. 4 (1986)), 83-89, (in Russian) · [Zbl 0713.22004](#)
- [21] Peters, J., Entropy on discrete Abelian groups, *Adv. Math.*, 33, 1-13 (1979) · [Zbl 0421.28019](#)
- [22] Peters, J., Entropy of automorphisms on L.C.A. groups, *Pac. J. Math.*, 96, 2, 475-488 (1981) · [Zbl 0478.28010](#)
- [23] Robinson, D. J.S., *A Course in the Theory of Groups* (1996), Springer-Verlag: Springer-Verlag New York
- [24] Schmidt, R., Subgroup Lattices of Groups, *Expositions in Math.*, vol. 14 (1994), de Gruyter, xv+572 pp · [Zbl 0843.20003](#)
- [25] Strunkov, S. B., Topological hamiltonian groups, *Usp. Mat. Nauk*, 20, 1157-1161 (1965), (in Russian)
- [26] Suzuki, M., *Structure of a Group and the Structure of Its Lattice of Subgroups*, *Ergebnisse tier Mathematik* (1956), Springer: Springer Berlin · [Zbl 0070.25406](#)
- [27] Virili, S., Entropy for endomorphisms of LCA groups, *Topol. Appl.*, 159, 2546-2556 (2012) · [Zbl 1243.22007](#)
- [28] Weiss, M. D., Algebraic and other entropies of group endomorphisms, *Math. Syst. Theory*, 8, 3, 243-248 (1974/1975) · [Zbl 0298.28014](#)
- [29] Willis, G. A., The scale and tidy subgroups for endomorphisms of totally disconnected locally compact groups, *Math. Ann.*, 361, 12, 403-442 (2015) · [Zbl 1308.22002](#)
- [30] Wolf, J., Growth of finitely generated solvable groups and curvature of Riemannian manifolds, *J. Differ. Geom.*, 2, 424-446 (1968) · [Zbl 0207.51803](#)

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.