

The Topological Entropy of Powers on Lie Groups

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Abstract. This talk addresses the problem of the computation of the topological entropy of an application $\psi : G \rightarrow G$, where G is a Lie group, given by some power $\psi(g) = g^k$, with k a positive integer. When G is commutative, ψ is an endomorphism and its topological entropy is given by $h(\psi) = \dim(T(G)) \log(k)$, where $T(G)$ is the maximal torus of G , as shown in [1]. But when G is not commutative, ψ is no longer an endomorphism and these previous results cannot be used. Still, ψ has some interesting symmetries, for example, it commutes with the conjugations of G . In [2], the structure theory of Lie groups is used to show that $h(\psi) = \dim(T) \log(k)$, where T is a maximal torus of G , generalizing the commutative case formula.

References

- [1] M. Patrão: *The Topological Entropy of Endomorphisms of Lie Groups*, Israel Journal of Mathematics, to appear (2019).
- [2] M. Patrão: *The Topological Entropy of Powers on Lie Groups*, To be submitted (2019).