Systoles and Markov chains in graphs

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Abstract

The fruitful relationship between the Geometry and the Graph Theory has been explored by several authors in the sense of bringing results for the discrete dynamical systems seen as Markov chains in graphs [1], [2], [3] and [4]. In this work we will explore the relationship between the topological entropy and systoles in the particular context of maps on the interval. We establish the relation between the systole and the topological entropy for continuous maps. We give a formula to determine the systole of the n-th iterate of a map S, from the systole of the map S. We show that there exist noncontinuous interval maps with arbitrary finite systole.

Keywords

Systoles, Topological Markov chains, Iterated interval maps, Graphs.

References

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