

N-expansive homeomorphisms with the shadowing property

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Resumo/Abstract:

We discuss the dynamics of n -expansive homeomorphisms with the shadowing property defined on compact metric spaces. For every $n \in \mathbb{N}$, we exhibit an n -expansive homeomorphism, which is not $(n - 1)$ -expansive, has the shadowing property and admits an infinite number of chain-recurrent classes. We discuss some properties of the local stable (unstable) sets of n -expansive homeomorphisms with the shadowing property and use them to prove that some types of the limit shadowing property are present. This deals some direction to the problem of non-existence of topologically mixing n -expansive homeomorphisms that are not expansive.