

# POSITIVELY $N$ -EXPANSIVE MAPS

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RESUMO. Expansiveness and shadowing properties have been discussed since the beginnings of dynamical systems theory. They are so important to the hyperbolic theory that homeomorphisms admitting them are usually called topologically hyperbolic, since their dynamics and the hyperbolic dynamics are pretty much the same. Many authors considered generalizations of both shadowing and expansiveness. One of them, which is receiving much attention recently, is  $N$ -expansiveness. We show that the minimal set of the Denjoy map is positively 2-expansive and that if a positively  $N$ -expansive homeomorphism is defined in a compact metric space  $X$ , is transitive and admits the shadowing property, then  $X$  is finite. This also proves the known fact that the minimal set of the Denjoy map does not have the shadowing property. If time permits we will also discuss the number of different stable sets in the local stable set of a psitively  $N$ -expansive system. Joint work with Bernardo Carvalho (UFMG-Brazil).

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*Date:* 10 de setembro de 2018.