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Titulo: Transfer operators, atomic decomposition and Besov spaces.

Resumo: Since Ruelle's groundbreaking contributions, the study of transfer operators has become a main tool for understanding the ergodic theory of expanding maps, which are discrete dynamical systems that locally expand distances. Questions regarding the existence of interesting invariant measures and other statistical properties, such as exponential decay of correlations and the Central Limit Theorem, can be answered by studying the spectral properties of the operators' action on suitable spaces of functions. By utilizing the atomic decomposition method, we consider new Banach spaces of functions, which in some cases coincide with Besov spaces. These spaces have a remarkably simple definition and allow us to obtain very general results on the quasi-compactness of the transfer operator acting in these spaces, even when the underlying phase space and expanding map are highly irregular. This work was conducted in collaboration with Alexander Arbieto (UFRJ-Brazil).