

Atomic decomposition and transfer operators

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We use atomic decomposition in a quite general setting of a probability space endowed with a sequence of grids to define a scale of Banach spaces. Its definition is remarkably concrete and elementary. Moreover in homogeneous spaces (a quasi-metric space with a doubling probability) and the appropriate choice of the grids, such scale coincides with Besov spaces of small regularity. We show that transfer operators of a wide class of expanding maps acts as quasi-compact operators in such Banach spaces. This includes examples as Lorenz maps, multidimensional expanding maps and piecewise $C^{1+\alpha}$ 1-d expanding maps. Joint work with Alexander Arbieto (UFRJ-Brazil)