Burrell, Stuart A.
On the dimension and measure of inhomogeneous attractors. (English) [Zbl 1423.28017]
Real Anal. Exch. 44, No. 1, 199-216 (2019).

This paper is devoted to inhomogeneous attractors for iterated function system (IFS). Also, a survey on similar and related investigations is given.

The main attention is given to filling a significant gap in the dimension theory of inhomogeneous attractors, by studying those formed from arbitrary bi-Lipschitz contractions. It is proved that the maximum of the dimension of the condensation set and a quantity related to pressure, which is called the upper Lipschitz dimension, forms a natural and general upper bound on the dimension. The author notes the following:

“We begin a new line of enquiry; the methods developed are used to classify the Hausdorff measure of inhomogeneous attractors. Our results have applications for affine systems with affinity dimension less than or equal to one and systems satisfying bounded distortion, such as conformal systems in dimensions greater than one.”

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MSC:
28A80 Fractals
28A78 Hausdorff and packing measures
28A99 Classical measure theory

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inhomogeneous attractor; box dimension; Hausdorff measure; self-conformal set; self-affine set; bounded distortion; iterated function system (IFS)

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