ON THE GEOMETRIC STRUCTURE OF THE LIMIT SET OF CONFORMAL ITERATED FUNCTION SYSTEMS

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Abstract

We consider infinite conformal function systems on $\mathbb{R}^d$. We study the geometric structure of the limit set of such systems. Suppose this limit set intersects some $l$-dimensional $C^1$-submanifold with positive Hausdorff $t$-dimensional measure, where $0 < l < d$ and $t$ is the Hausdorff dimension of the limit set. We then show that the closure of the limit set belongs to some $l$-dimensional affine subspace or geometric sphere whenever $d$ exceeds 2 and analytic curve if $d$ equals 2.

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Key words. Iterated function system, self-conformal set, local geometric structure.

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