

Irrational self-similar sets

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Abstract. Let $K \subset \mathbb{R}$ be a self-similar set defined on \mathbb{R} . It is easy to prove that if the Lebesgue measure of K is zero, then for Lebesgue almost every t ,

$$K + t = \{x + t : x \in K\}$$

only consists of irrational or transcendental numbers. In this note, we shall consider some classes of self-similar sets, and explicitly construct such t 's. Our main idea is from the q -expansions.

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