

Year: 2022

Vol.: 100

Fasc.: 3-4

Title: Irrational self-similar sets

Author(s): Qi Jia, Yuanyuan Li and Kan Jiang

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.

Address:

Qi Jia
Department of Mathematics
Ningbo University
P. R. China

Address:

Yuanyuan Li
Department of Mathematics
Ningbo University
P. R. China

Address:

Kan Jiang
Department of Mathematics
Ningbo University
P. R. China