

Original Articles

## $R^d$ 中烹调-刀具集的测度及其维数谱

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**摘要** 讨论了 $R^d$ 中烹调-刀具集的特征.导出压力函数项中烹调-刀具集Hausdorff维数的Bowen公式.证明了烹调-刀具集上自相似测度、共形测度和Gibbs测度的存在性.分析了这些测度的维数谱,此外证明了这些测度的局部一致 $\alpha$ -维数条件和分形Plancherel定理.最后,证明了烹调-刀具集Hausdorff测度阶2密度的存在性.

**关键词** [烹调-刀具集](#) [Gibb测度](#) [共形测度](#) [多分形分解](#)

分类号

## Measures and their dimension spectrums for cookie-cutter sets in $R^d$

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**Abstract** The characteristics of cookie-cutter sets in  $R^d$  are investigated. A Bowen's formula for the Hausdorff dimension of a cookie-cutter set in terms of the pressure function is derived. The existence of self-similar measures, conformal measures and Gibbs measures on cookie-cutter sets is proved. The dimension spectrum of each of these measures is analyzed. In addition, the locally uniformly  $\alpha$ -dimensional condition and the fractal Plancherel Theorem for these measures are shown. Finally, the existence of order-two density for the Hausdorff measure of a cookie-cutter set is proved.

**Key words** [Cookie-cutter sets](#) [Hausdorff dimensions](#) [Multifractal decompositions](#)

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