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## Dimensional Properties of Fractional Brownian Motion

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摘要

关键词 [fractional Brownian motion](#) [Hausdorff dimension](#) [uniform dimension results](#) [strong local nondeterminism](#)

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**Abstract** Let  $B^{\alpha} = \{B^{\alpha}(t), t \in \{\mathbb{R}^N\}\}$  be an  $(N, d)$ -fractional Brownian motion with Hurst index  $\alpha \in (0, 1)$ . By applying the strong local nondeterminism of  $B^{\alpha}$ , we prove certain forms of uniform Hausdorff dimension results for the images of  $B^{\alpha}$  when  $N > \alpha d$ . Our results extend those of Kaufman for one-dimensional Brownian motion.

**Key words** [fractional Brownian motion](#) [Hausdorff dimension](#) [uniform dimension results](#) [strong local nondeterminism](#)

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