

1131-37-154

William Ott* (ott@math.uh.edu) and **Zijie Zhou**. *The effect of projections on fractal sets and measures in Banach spaces.*

Motivated by infinite-dimensional dynamical systems, we address how nonlinear maps affect dimension for sets and measures in Banach spaces. More precisely, suppose A is a compact subset of a Banach space \mathcal{B} . For a *typical* C^1 map $f : \mathcal{B} \rightarrow \mathbb{R}^m$, what is the relationship between the Hausdorff dimension of A and that of $f(A)$?

Here, we show that a typical C^1 map preserves the Hausdorff dimension of A , up to a factor that involves the *dual thickness* of A . This result answers a question posed by James Robinson. We conclude by comparing the Banach space result to what is known when \mathcal{B} is a Hilbert space. (Received July 12, 2017)