
BALÁSZ BÁRÁNY, Einstein Inst. Mathematics, Hebrew Univ. of Jerusalem & MTA-BME Stochastic Res. Group, BUTE
Dimension of self-affine sets with typical linear parts

An affine iterated function system is a finite collection of affine invertible contractions and the invariant set associated to the mappings is called self-affine. In 1988, Falconer proved that, for given matrices, the Hausdorff dimension of the self-affine set is the affinity dimension for Lebesgue almost every translation vectors. Similar statement was proven by Jordan, Pollicott, and Simon in 2007 for the dimension of self-affine measures. They also introduced a self-affine transversality condition, which allowed to consider parametrised translation vectors.

In this talk, we have an orthogonal approach. We introduce a modified self-affine transversality condition, which allows us to consider a family of parametrised linear parts. Moreover, we show a class of self-affine systems in which, for given translation vectors, we get the same results, like Falconer'88 and Jordan, Pollicott and Simon'07, for Lebesgue almost all matrices.

This is a joint work with Antti Käenmäki and Henna Koivusalo.