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Newhouse Thickness and Falconer-type problems

Th Falconer distance conjecture states that if E is a subset of R^d of Hausdorff dimension greater then $d/2$, then the set of distances $\Delta(E) = \{|x-y| : x, y \in E\}$ has positive measure. Related questions include finding conditions on E which guarantee that (1) $\Delta(E)$ has non-empty interior or; (2) E contains various finite point configurations. We consider a variant of these problems in which the Hausdorff dimension is replaced by an alternate notion of structure, mainly that of Newhouse thickness, and the single distance $|x-y|$ is replaced by a tuple of distances described by a given graph over E.