1067-42-417   **Alex Iosevich*** (`iosevich@math.rochester.edu`), Department of Mathematics, University of Rochester, Rochester, NY 14627. *On simplexes determined by fractal subsets of the Euclidean space.*

We prove that if the Hasudorff dimension of a subset of the Euclidean space is sufficiently large, then the Lebesgue measure of the set of k-simplexes determined by this set is positive. This is a natural generalization of the Falconer distance problem and is a continuous variant of a class of problems in discrete geometry. Connections with the theory of multi-linear operators and discrete geometry are explored. (Received September 02, 2010)

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