

OPTION 1:

A Roth type theorem for large subsets of multidimensional Euclidean spaces

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We prove that sets of positive upper density contain 3-term progressions of all sufficiently large gaps when the gap size is measured by the l^4 -metric. This is known to be false in the ordinary l^2 -metric and one of the goals of this note is to understand this phenomenon. Joint work with Brian Cook and Akos Magyar.