

CONSTRUCTIONS OF LARGE CAPS AND PROGRESSION-FREE SETS

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A cap is a set of points in the affine or projective space without three points on a line. The construction of large caps is a classical topic in geometry and more recently also in additive combinatorics.

In this talk, we present a new explicit global and digit-based construction of large caps, with which we improve longstanding lower bounds for the size of largest caps in the affine space $AG(n, p)$ for small primes p .

Moreover, we use the same method to obtain new results for the maximal size of progression-free sets in the mentioned spaces.

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