

CONSTRUCTIONS OF LARGE CAPS

GABRIEL F. LIPNIK

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 2017, important breakthroughs by Croot, Lev and Pach as well as by Ellenberg and Gijswijt have lead to greatly improved *upper bounds* for the largest possible size of affine caps.

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 . This is joint work with Christian Elsholtz.

GRAZ UNIVERSITY OF TECHNOLOGY, AUSTRIA
E-mail address: lipnik@math.tugraz.at