

This is a supporting document for “Large $\{0, 1, \dots, t\}$ -Cliques in Dual Polar Graphs” by Klaus Metsch and the author. These are the authors guesses for the magnitude of the LP bound for $\{0, 1, \dots, t\}$ -cliques in the respective graphs. See that paper for all unexplained notation. We are using

$$\deg_q \left(\begin{bmatrix} n \\ k \end{bmatrix}_q \right) \approx k(n - k).$$

We will list degrees of two canonical examples and the bound. We are only providing the degree in q . We assume $d - 1 > t > 1$.

Example 0.1. *The set of all generators, which contain a fixed $(d - t)$ -space.*

Example 0.2. *The set of all generators, which meet a fixed d -space in at least codimension $t/2$ (t even).*

Example 0.3. *The set of all generators, which meet a fixed $(d - 1)$ -space in at least codimension $(t - 1)/2$ (t odd).*

The sizes of the examples are as follows:

Example	Example 0.1	Example 0.2	Example 0.3
Degree	$\binom{t-1}{2} + et$	$\binom{t/2}{2} + e\frac{t}{2} + \frac{t}{2}(d - \frac{t}{2})$	$\binom{(t+1)/2}{2} + e\frac{(t+1)}{2} + \frac{t-1}{2}(d - \frac{t+1}{2})$

The bounds are as follows:

d	t	e	Bound
even	even	1, 2	$(d + 1)t/2$
		3/2	$dt/2$
		≤ 1	$(dt - t + 2te)/2$
	odd	1, 2	$(dt + t - d - 1 + 2e)/2$
		3/2	$(dt - d + 4)/2$
		≤ 1	$(dt - t - d + 1 + 2te)/2$
odd	even	≥ 1	$(d + 2e - 2)t/2$
		$\leq 1/2$	$(dt - 2(t - 1)e)/2$
		odd	≥ 1
$\leq 1/2$	$(dt - d - 2(t - 3)e)/2$		

It is apparent that the degree of the LP-bound is usually by approximately $t^2/8$ away from the two latter examples. The bounds are based on guesses from small d, t, q . The author would be very interested in proofs, which (approximately) show the results in the given table for general d, t, q .

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