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Improved bounds on the diameter of lattice polytopes

The focus of this talk is on the largest possible diameter $\delta(d,k)$ of a lattice polytope contained in the hypercube $[0,k]^d$. A recent result by Del Pia and Michini bounds $\delta(d,k)$ above by $kd - \lceil d/2 \rceil$ when $k \geq 2$. Pursuing their approach, Deza and Pournin have improved this bound when $k \geq 3$ as $kd - \lceil 2d/3 \rceil$. The key arguments of the proof will be given as well as a number of reasons why further improving this bound using the same ideas may be challenging.