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*More bounds on the diameter of convex polytopes*

Let  $\Delta(d, n)$  be the maximum possible edge diameter over all polytopes defined by  $n$  inequalities in dimension  $d$ . The conjecture of Hirsch, formulated in 1957, states that  $\Delta(d, n)$  is not greater than  $n - d$ . No polynomial bound is known for  $\Delta(d, n)$ , the best one being quasipolynomial and due to Kalai and Kleitman in 1992. Goodey showed in 1972 that  $\Delta(4, 10) = 5$  and  $\Delta(5, 11) = 6$ . Recently, Bremner and Schewe proved that  $\Delta(4, 11) = \Delta(6, 12) = 6$ . In this follow-up work, we show that  $\Delta(4, 12) = 7$  and present evidence that  $\Delta(5, 12) = \Delta(6, 13) = 7$ .

Based on a joint work with David Bremner (University of New Brunswick), William Hua (McMaster University), Lars Schewe (TU Darmstadt, Germany).