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On Borsuk's conjecture

In 1933 Karol Borsuk conjectured that every closed set in $\mathbb{R}^n$ of diameter 1 could be partitioned into $n+1$ parts of smaller diameters. The conjecture was disproved in 1993 by Kahn and Kalai. In particular, their construction gives counterexamples for Borsuk's conjecture for $n = 1325$ and for all $n > 2014$. Until recently the best known result was that Borsuk's conjecture is false for all $n \geq 298$.

We will show how to use the Euclidean representation of strongly regular graphs to construct a two-distance set consisting of 416 points on the unit sphere in the dimension 65 which cannot be partitioned into 83 parts of smaller diameter.