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Pablo Shmerkin* (pshmerkin@math.ubc.ca). *New dimension bounds for pinned distance sets*. Preliminary report.

One version of the Falconer distance set conjecture asserts that the set $\Delta(A)$ of Euclidean distances spanned by pairs of points of a Borel set $A \subset \mathbb{R}^d$ of Hausdorff dimension $d/2$ has full Hausdorff dimension. A stronger version asserts that even $\Delta^y(A) = \{|x - y| : y \in A\}$ has full Hausdorff dimension for some $y \in A$.

This is open in all dimensions. Recently, significant progress was achieved under stronger assumptions on the dimension of A . I will discuss some new partial progress for sets of dimension exactly $d/2$ in dimensions 2 and 3. Based on joint work (in progress) with Hong Wang. (Received March 07, 2021)