

# NEW BOUNDS ON THE DIMENSIONS OF PLANAR DISTANCE SETS

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ABSTRACT. One version of Falconer's distance set conjecture in the plane asserts that if a Borel set in the plane has Hausdorff dimension at least 1, then it spans a set of directions of Hausdorff dimension 1. I will present my joint work with Tamás Keleti in which we prove this conjecture for large classes of sets, and obtain new bounds for general sets which greatly improve the existing ones for sets of dimension slightly bigger than 1. If time allows, I will describe one of the main tools used in the proof: multiscale projections.

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