

## On the number of directions determined by families of sets

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In 1982, Ungar proved that the lines spanned by a set of  $2n$  non-collinear points determine at least  $2n$  directions (slopes). This bound is tight and the configurations achieving this minimum are called direction critical. There are four known families of direction critical configurations and Jamison conjectured that all large enough direction critical configurations belong to these families. This problem can be extended to finite families of convex sets, where the directions are given by the slopes of the lines tangent to pairs of convex sets. Although there are bounds for the corresponding minimum, a lot less is known for this variation of the problem. In this talk, we present the latest progress towards Jamison's conjecture as well as some new results for special families of convex sets.

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