

# Equiangular Lines with a Fixed Angle

Yufei Zhao (MIT)

Solving a longstanding problem on equiangular lines, we determine, for each given fixed angle and in all sufficiently large dimensions, the maximum number of lines pairwise separated by the given angle.

A key ingredient is a new result in spectral graph theory: the adjacency matrix of a connected bounded degree graph has sublinear second eigenvalue multiplicity.

Joint work with Zilin Jiang, Jonathan Tidor, Yuan Yao, and Shengtong Zhang.