Recent progress on equiangular lines

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Abstract

A set of lines in $\mathbb{R}^n$ is called equiangular if the angle between each pair of lines is the same. We address the question to determine the maximum size of equiangular lines in $\mathbb{R}^n$. I will talk about the recent progress on the upper bounds of equiangular line problems. In particular, we proved that there are no 76 equiangular lines in $\mathbb{R}^{19}$ and starting from the dimension $n = (2k+1)^2 - 2$, for any positive integer k, there will be long range fixed number of upper bounds for equiangular lines.