

Department of Mathematics, BGU

Colloquium

On Tuesday, January 2, 2018

At 13:00 – 14:00

In Math 101-

Benny Sudakov (ETH)

will talk about

Equiangular lines and spherical codes in Euclidean spaces

Abstract: A family of lines through the origin in Euclidean space is called equiangular if any pair of lines defines the same angle. The problem of estimating the maximum cardinality of such a family in \mathbb{R}^n was extensively studied for the last 70 years. Answering a question of Lemmens and Seidel from 1973 in this talk we show that for every fixed angle θ and sufficiently large n there are at most $2n-2$ lines in \mathbb{R}^n with common angle θ . Moreover, this is achievable only when $\theta = \arccos \frac{1}{3}$. Various extensions of this result to the more general settings of lines with k fixed angles and of spherical codes will be discussed as well. Joint work with I. Balla, F. Drexler and P. Keevash.

Please Note the Unusual Time!