ITAY LONDNER, UBC

Exponential frames and syndetic Riesz sequences

In my talk I will discuss the following problem: Given a subset of the circle of positive Lebesgue measure $S \subset \mathbb{T}$, does there exist a subset of the integers $\Lambda \subset \mathbb{Z}$ with bounded gaps between consecutive elements, and such that the exponential system $E(\Lambda) := \{e^{i\lambda t}\}_{\lambda\in\Lambda}$ is a Riesz sequence in $L^2(S)$.

The solution to this problem is based on an application of the recent solution to the Kadison-Singer problem. In some cases an explicit (i.e. non-probabilistic) construction is attainable, using Fourier quasicrystals.

Joint work with Marcin Bownik (University of Oregon).