Title:

Resolution of the Quadratic Littlewood-Offord problem

Abstract:

Consider a quadratic polynomial $Q(\xi_{1},\dots,\xi_{n})$ of independent Rademacher random variables. To what extent can $Q(\xi_{1},\dots,\xi_{n})$ concentrate on a single value? This is a quadratic version of the classical Littlewood-Offord problem; it was was popularised by Costello, Tao and Vu in their study of symmetric random matrices, and has since developed into an active topic of research, connecting combinatorics, probability and computer science. In this talk we will discuss a new essentially optimal bound for the quadratic Littlewood-Offord problem, as conjectured by Nguyen and Vu.

Joint work with Lisa Sauermann