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TITLE:

Recent developments in Dvoretzky theory

ABSTRACT:

The Dvoretzky theorem is the cornerstone of the local theory of normed spaces. In its simplest form asserts that all high-dimensional normed spaces contain relatively large subspaces which are almost Euclidean. To determine its optimal (quantitative) form is an important open question that goes back to Grothendieck (1953). In the first part of this talk we will offer a brief historical overview of the problem. In the second part we will explain how probabilistic dichotomies, based on superconcentration phenomenon, are basic ingredient to settle the random version of the theorem. Based on joint work(s) with Grigoris Paouris (Texas A&M University).