

Expanders in Higher Dimensions

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Abstract

Expander graphs have been studied in many areas of mathematics and in computer science with versatile applications, including coding theory, networking, computational complexity and geometry.

High-dimensional expanders are a generalization that has been studied in recent years and their promise is beginning to bear fruit. In the talk, I will survey some powerful local to global properties of high-dimensional expanders, and describe several interesting applications, ranging from convergence of random walks to construction of locally testable codes that prove the c^3 conjecture (namely, codes with constant rate, constant distance, and constant locality).

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