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Ramanujan complexes and high dimensional expanders*

Alexander Lubotzky

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Abstract. Expander graphs in general, and Ramanujan graphs in particular, have been of great interest in the last four decades with many applications in computer science, combinatorics and even pure mathematics. In these notes we describe various efforts made in recent years to generalize these notions from graphs to higher dimensional simplicial complexes.

Keywords and phrases: expanding graphs, high dimensional expanders, Ramanujan graphs, Ramanujan complexes, overlapping property

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A. LUBOTZKY
Einstein Institute of Mathematics, Hebrew University, Jerusalem 91904, Israel
(e-mail: alex.lubotzky@mail.huji.ac.il)