

## The eleventh Takagi Lectures

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November 18, 2012 (Sun) 10:00–11:00

November 18, 2012 (Sun) 15:45–16:45

Graduate School of Mathematical Sciences

The University of Tokyo

# Ramanujan Complexes and High Dimensional Expanders

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### Abstract

Expander graphs, in general, and Ramanujan graphs, in particular, have been objects of intensive research in the last four decades. Many applications came out, initially to computer science and combinatorics and more recently also to pure mathematics (number theory, geometry, group theory). In recent years, there has been an interest in generalizing this theory to higher dimensional simplicial complexes. We plan to survey first the classical theory and then to describe the more recent developments. Some directions of current research will be presented as well as suggestions for future research.