



Mathematics and CS Seminar

Introduction to High-Dimensional Expansion

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Expander graphs have been in the focus of mathematicians and computer scientists since the end of the 1960s. Recently, there has been a growing interest in generalizations of expansion for higher dimensional complexes.

First, we briefly review expander graphs, and then we introduce a particular generalization called coboundary expansion which arose independently in two very different contexts: on one hand, in the work of Linial and Meshulam on the homological connectivity of random simplicial complexes, and on the other hand, in Gromov's work where it was shown that coboundary expansion implies the so-called topological overlap property. We will elaborate on these results.

In the last part of the talk, we discuss an extension of Gromov's theorem by Dotterrer, Kaufman, and Wagner and present its application to Ramanujan complexes due to Kaufman, Kazhdan, and Lubotzky.

Thursday, June 1, 2017 02:45pm - 04:45pm

Mondi Seminar Room 2, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.