

Expansion for Simplicial Complexes

Anna Gundert, Institut für Theoretische Informatik, Zürich

For graphs, the notion of expansion is a highly useful concept that has found applications in various areas, especially in combinatorics and theoretical computer science. In recent years, the success of this concept has inspired the search for a corresponding notion in higher dimensions. Recently, a topologically motivated notion analogous to edge expansion that is based on \mathbb{Z}_2 -cohomology was introduced by Gromov and independently by Linial, Meshulam and Wallach. A different, combinatorially motivated generalization of edge expansion was studied by Parzanchevski, Rosenthal and Tessler. We will discuss these different notions of higher-dimensional expansion and how they relate to each other.