

Isoperimetric stability for the cube

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The n -cube is the graph on vertex set $\{0, 1\}^n$ in which two vertices are adjacent if they differ in a single coordinate. Given a subset A of $\{0, 1\}^n$, one may ask how much A ‘expands’. Two natural measurements of expansion are given by the edge boundary (how many edges leave A) and the vertex boundary (how many vertices are adjacent to some element in A). Optimal bounds for these quantities based on the size of A are given by the edge & vertex isoperimetric inequalities for the cube. In this talk I will discuss some recent work which gives stability for these inequalities.