

Induced subgraphs of hypercubes

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Abstract

Let Q_k denote the k -dimensional hypercube on 2^k vertices. A vertex in a subgraph of Q_k is *full* if its degree is k . We apply the Kruskal-Katona Theorem to compute the maximum number of full vertices an induced subgraph on $n \leq 2^k$ vertices of Q_k can have, as a function of k and n . – This is a slightly extended version of the JMM talk in Baltimore last January 15th.

Keywords: hypercube, simplicial polytope, Kruskal-Katona Theorem.