

Revlex-Initial 0/1-Polytopes

R. Mechtel
(joint work with V. Kaibel)

Revlex-Initial 0/1-Polytopes are a special class of knapsack polytopes. They have several interesting properties. E.g. they can be extended to a class of 0/1-polytopes with few facets and few edges for any pair of dimension d and number of Vertices N with $d < N \leq 2^d$.

The main result presented in this talk is, that revlex-initial 0/1-polytopes have edge expansion at least 1. Thus there is a class of 0/1-polytopes with sparse graphs but edge expansion at least 1 for every dimension d and reasonable number of vertices N .

This result supports a conjecture of Mihail and Vazirani who conjectured that all 0/1-polytopes have edge expansion at least 1.