On the vertices of the cut polytope relaxations and associated hypergraphs

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Abstract

We study a relationship between a special class of hypergraphs and properties of the relaxation points $M_{n,k}$ of a cut polytope. We prove that, for sufficiently large n, the polytopes $M_{n,4}$ and $M_{n,5}$ have points whose decompositions in the vertices of $M_{n,3}$ contain no integer vertices.

Joint work with Vladimir Bondarenko.