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"Conic lifts of polytopes"

Abstract:

To represent efficiently a polytope, it is often a good idea to write it as the projection of a simpler object. A celebrated result by Yannakakis shows that the existence of simple polytopes projecting to a given polytope depends on the existence of nonnegative factorizations of its slack matrix. This result has attracted renewed attention in recent years and many interesting developments have appeared.

In this talk we will present a generalization of this result to other types of representations of polytopes and give an overview of recent advances and main open questions in this area.