
TONY HUYNH, Université Libre de Bruxelles

Extension Complexity of Matroid Polytopes

The *extension complexity* of a polytope P is the minimum number of facets over all polytopes Q that affinely project to P . Note that if Q has far fewer facets than P , then it is more efficient to do linear programming over Q instead of P .

Given a matroid M , we can think of M as a polytope via its base polytope (the convex hull of its bases). Therefore, extension complexity is also a measure of how complicated a matroid is. In this talk, I will give a crash course on extension complexity, with particular emphasis on matroid polytopes.