

A history of the stable set polytope of claw-free graphs

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The stable set problem on claw-free graphs is a proper generalization of the matching problem. However, while the algorithmic nature of matching nicely carries over to stable set in claw-free graphs, describing the polyhedral structure has remained a challenge for more than three decades. Of course, thanks to the seminal work of Grötschel, Lovász and Schrijver on the equivalence between optimization and separation, the polyhedra is somewhat under control. Nevertheless the same authors asked in their paper for the existence of a more “decent linear description”. In this talk, we will survey important contributions to this question over the last three decades. In particular, we will see that recent developments propose possible answers. But is the question really closed?