Minisymposium 1 - Discrete Optimization

The stable set polytope of quasi-line graphs

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It is a long standing open problem to find an explicit description of the stable set polytope of *claw-free graphs*. Yet more than 20 years after the discovery of a polynomial algorithm for the maximum stable set problem for claw-free graphs, there is even no conjecture at hand today.

Such a conjecture exists for the class of *quasi-line graphs*. This class of graphs is a proper superclass of line graphs and a proper subclass of claw-free graphs for which it is known that not all facets have $0/1$ normal vectors. The *Ben Rebea conjecture* states that the stable set polytope of a quasi-line graph is completely described by *clique-family* inequalities. Chudnovsky and Seymour recently provided a decomposition result for claw-free graphs and proved that Ben Rebea's conjecture holds, if the quasi-line graph is not a *fuzzy circular interval graph*.

In this talk I present a proof of the Ben Rebea conjecture by showing that it also holds for fuzzy circular interval graphs.

Joint work with G. Oriolo, G.Stauffer and P. Ventura