On approximations, complexity, and applications for copositive programming

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Propositions

1. From a computational standpoint copositive programs are limited to approximations of the copositive cone and its dual unless P=NP.

2. Scaling has the potential to be a useful tool for improving bounds obtained via copositive programming.

3. There do not exist any cases other than that of order at most 4 and r = 0 for which the r-level Parrilo cone is equal to the copositive cone.

4. There exists a semidefinite formulation of the graph isomorphism problem.

5. When it comes to non-decreasing scalings, scaling such that the diagonal entries are constant is the best one can do.

6. Freedom of speech is useless unless it means the right to offend.

7. Cereal should be poured in a bowl before the milk.

8. Despite science's claim to objectivity, it also has a political and therefore subjective dimension to it.

9. Elections should first and foremost be about character.

10. Due to modern media, these days almost everything is image. This frequently leads to the undesirable situation where the actions of a person are no longer judged on their merit but by the image of that person.