

Seminário CEA FEL*

30 de Junho – 15:00 - sala 6.2.38

Polytopes, slack ideals and psd-minimality

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Abstract:

The slack ideal is an algebraic object that codifies the geometry of a polytope. This notion was motivated by the study of psd-minimality of polytopes: A d -polytope is said to be psd-minimal if it can be written as a projection of a slice of the cone of $d+1$ by $d+1$ positive semidefinite matrices, the smallest possible size for which this may happen. We will show how the slack ideal can be used to extract conditions on psd-minimality, completing the classification of psd-minimal 4-polytopes, settling some open questions and creating new ones. We will proceed to explore the relation of slack ideals and toric ideals of graphs and present some ongoing work and open questions.

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