

Polynomial systems with many real positive solutions via tropical geometry

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We use a version Viro's patchworking theorem to construct systems with number of positive solutions which is at least the size of the largest positively decorable subcomplex of a regular triangulation of a polytope. We explain a duality result about such subcomplexes which enables us to get the currently best lower bounds known on the maximal number of positive solutions of polynomial systems with fixed supports.

This is a joint work with Francisco Santos and Pierre-Jean Spaenlehauer.

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