

Noncommutative Positivstellensätze for matrix algebras

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Positivstellensätze express (some) positive elements of (some) $*$ -algebras in terms of weighted sums of squares. Here positive elements can be defined by $*$ -representations, by point evaluations or by general $*$ -orderings. In the talk various types of Positivstellensätze for noncommutative $*$ -algebras are proposed and discussed. New Positivstellensätze for matrix $*$ -algebras are presented. Some open problems are formulated.

This is a joint work with K. Schmüdgen.