

# HANDELMAN'S POSITIVSTELLENSATZ FOR POLYNOMIAL MATRICES POSITIVE DEFINITE ON POLYHEDRA

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ABSTRACT. We give a matrix version of Handelman's Positivstellensatz (Handelman in *Pac J Math* 132:35-62, 1988), representing polynomial matrices which are positive definite on convex, compact polyhedra. Moreover, we propose also a procedure to find such a representation. As a corollary of Handelman's theorem, we give a special case of Schmüdgen's Positivstellensatz for polynomial matrices positive definite on convex, compact polyhedra.

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