



AN IMPROVED CHARACTERISATION OF THE INTERIOR OF THE COMPLETELY POSITIVE CONE*

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Abstract. A symmetric matrix is defined to be completely positive if it allows a factorisation BB^T , where B is an entrywise nonnegative matrix. This set is useful in certain optimisation problems. The interior of the completely positive cone has previously been characterised by Dür and Still [M. Dür and G. Still, Interior points of the completely positive cone, *Electronic Journal of Linear Algebra*, 17:48–53, 2008]. In this paper, we introduce the concept of the set of zeros in the nonnegative orthant for a quadratic form, and use the properties of this set to give a more relaxed characterisation of the interior of the completely positive cone.

Key words. Completely positive matrices, Copositive matrices, Cones of matrices.

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