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The Re-nonnegative definite solutions to the matrix equation $AXB = C$

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Abstract: An $n \times n$ complex matrix A is called Re-nonnegative definite (Re-nnd) if the real part of x^*Ax is nonnegative for every complex n-vector x. In this paper criteria for a partitioned matrix to be Re-nnd are given. A necessary and sufficient condition for the existence of and an expression for the Re-nnd solutions of the matrix equation $AXB = C$ are presented.

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