The group inverse of circulant matrices depending on four parameters. (English)

Summary: Explicit expressions for the coefficients of the group inverse of a circulant matrix depending on four complex parameters are analytically derived. The computation of the entries of the group inverse are now reduced to the evaluation of a polynomial. Moreover, our methodology applies to both the invertible and the singular case, the latter being computationally less expensive. The techniques we use are related to the solution of boundary value problems associated with second order linear difference equations.

MSC:
15B05 Toeplitz, Cauchy, and related matrices
15A09 Theory of matrix inversion and generalized inverses

Keywords:
circulant matrix; group inverse; Chebyshev polynomials; difference equations

Full Text: DOI

References:

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.