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ON A NEW CLASS OF STRUCTURED MATRICES RELATED TO THE DISCRETE SKEW-SELF-ADJOINT DIRAC SYSTEMS*

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Abstract. A new class of the structured matrices related to the discrete skew-self-adjoint Dirac systems is introduced. The corresponding matrix identities and inversion procedure are treated. Analogs of the Schur coefficients and of the Christoffel-Darboux formula are studied. It is shown that the structured matrices from this class are always positive-definite, and applications for an inverse problem for the discrete skew-self-adjoint Dirac system are obtained.

Key words. Structured matrices, Matrix identity, Schur coefficients, Christoffel-Darboux formula, Transfer matrix function, Discrete skew-self-adjoint Dirac system, Weyl function, Inverse problem.

AMS subject classifications. 15A09, 15A24, 39A12.

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