

Matrix Valued Difference Equations with Spectral Singularities

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Abstract : In this study, we examine some spectral properties of non-selfadjoint matrix-valued difference equations consisting of a polynomial type Jost solution. The aim of this study is to investigate the eigenvalues and spectral singularities of the difference operator L which is expressed by the above-mentioned difference equation. Firstly, thanks to the representation of polynomial type Jost solution of this equation, we obtain asymptotics and some analytical properties. Then, using the uniqueness theorems of analytic functions, we guarantee that the operator L has a finite number of eigenvalues and spectral singularities.

Keywords : asymptotics, continuous spectrum, difference equations, eigenvalues, jost functions, spectral singularities

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