On the Krein and Friedrichs extensions of a positive Jacobi operator

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We describe extremal so-called Friedrichs and Krein extensions of positive Jacobi operator acting in $l^2(\mathbb{N})$ and formally defined from

$$(\mathrm{J}x)_n = a_n x_{n+1} + b_n x_n + a_{n-1} x_{n-1}, \quad a_n \in \mathbb{R}_+,\, b_n \in \mathbb{R}. \qquad (*)$$

Using the technique of boundary triplets and the corresponding Weyl functions (see [2, 3, 4, 5]), we complete and generalize the results obtained by B.M. Brown and J.S. Christiansen [1].

Namely, we parametrize extremal self-adjoint extensions of the initial positive minimal symmetric operator corresponding to $(*)$ in terms of a certain boundary conditions. In addition, we characterize the Krein extension in the case of matrix entries a_n, b_n.

The talk is based on a joint work with A. Ananyeva.

References

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