

SOME RESULTS ON ABSOLUTE CONTINUITY FOR UNBOUNDED JACOBI MATRICES

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Abstract. This brief paper presents several results which offer a useful approach for studying the absolute continuity of spectral measures associated with some Jacobi matrix operators. The operators are modeled as multiplication operators on a dense domain of a function space with a polynomial basis. Properties of these polynomials and commutator equations are used to obtain results on absolute continuity.

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REFERENCES

- J. BEREZANSKII, Expansions in Eigenfunctions of Self-adjoint Operators, translations of Mathematics Monographs, vol. 17, Amer. Math. Soc. Providence, R. I. 1968.
- [2] J. DOMBROWSKI, A commutator approach to absolute continuity for unbounded Jacobi operators, J. Math. Anal. Appl. 378 (2011), no. 1, 133–139.
- [3] J. DOMBROWSKI, Jacobi matrices: eigebenvalues and spectral gaps, Methods of Spectral Analysis in Mathematical Physics, Operator Theory: Advances and Applications, vol. 186, 103–113, Birkhauser, Basil, 2008.
- [4] J. DOMBROWSKI AND S. PEDERSEN, Absolute continuity for unbounded Jacobi matrices with constant row sums, J. Math. Anal. Appl. 277 (2002), 695–713.
- [5] S. PEDERSEN, Absolutely continuous Jacobi Operators, Proc. Amer. Math. Soc. 130 (2002), 2369– 2376.
- [6] C. R. PUTNAM, Commutation Properties of Hilbert Space Operators and Related Topics, Ergebnisse der Math., vol. 36, Springer-Verlag, Berlin, 1967.

