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Discrete Spectra of Certain Co-Recursive Pollaczek Polynomials and its Applications

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Abstract. For a special class of co-recursive Pollaczek polynomials the discrete part of the measure of orthogonality is determined. The results are applied for the determination of the fundamental frequencies of a certain class of Stieltjes-Krein discrete strings. Connections with best constants in Markov-Bernstein inequalities with integral norms are considered, too.

Keywords. Orthogonal polynomials, Laguerre polynomials, Meixner polynomials, Pollaczek polynomials, Markov-Bernstein inequalities, zeros of polynomials, discrete spectrum, discrete string.

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