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On Power Series Having Sections With Only Real Zeros

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Abstract. In this paper we investigate the class A^* of power series with non-negative coefficients such that all but a finite number of its sections have only real zeros. We obtain some new necessary conditions for a power series to belong to A^* . The main result of the paper is the complete answer to the question: for which a does the function $g_a(z) := \sum_{k=0}^{\infty} a^{-k^2} z^k$, $a > 1$, have only real zeros.

Keywords. Zeros of entire functions, polynomials with real zeros, totally positive sequences, sections of power series.

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