КЊИГА АПСТРАКАТА

THE BOOK OF ABSTRACTS
XII SYMPOSIUM "MATHEMATICS AND APPLICATIONS"
2nd December and 3rd December, 2022.

XII СИМПОЗИЈУМ „МАТЕМАТИКА И ПРИМЕНЕ"
2. децембар и 3. децембар 2022.

A note on some Chebyshev related integer sequences

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Abstract. We will present some results on r-circulant matrices whose entries are the Chebyshev polynomials of the first and second kind as well as close connections between the Chebyshev polynomials of the first and second kind and some well-known integer sequences. Using these connections we will apply the obtained results to r-circulant matrices involving various integer sequences. It will turn out that our results on the spectral norm bounds on such matrices are notably better than the previous ones.

Keywords: Chebyshev polynomials, circulant matrices, integer sequences.

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