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Section:

8. Analysis

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Taghavi, Mohsen, Shiraz University, Iran

Exact values of the Autocorrelation coefficients of the Rudin-Shapiro polynomials

The maximal order of the Autocorrelation coefficients of a Rudin-Shapiro polynomial of "length" L is dominated by $CL^{0.73}$ and the lower bound for those non-zero coefficients is $CL^{0.5}$, where C is an absolute constant. Using the square representation of their Fourier coefficients, we introduce some new techniques to find the exact values of all such coefficients.

1. M. Taghavi, *An estimate on the Correlation coefficients of the Rudin-Shapiro polynomials*, Iranian Journal of Science and Technology, Vol. 20, No. 2, 1996.
2. M. Taghavi, *Upper bounds for the Autocorrelation coefficients of the Rudin-Shapiro Polynomials*, Korean Journal of Computational and Applied Mathematics, Vol. 4, No. 1, 1997.
3. M. Taghavi, *An extremal problem applied to the Rudin-Shapiro polynomials*, Korean Journal of Computational and Applied Mathematics, Vol. 5, No. 1, 1998.