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ZEROS AND LOCAL EXTREME POINTS OF FABER POLYNOMIALS ASSOCIATED WITH HYPOCYCLOIDAL DOMAINS*

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Abstract. Faber polynomials play an important role in different areas of constructive complex analysis. Here, the zeros and local extreme points of Faber polynomials for hypocycloidal domains are studied. For this task, we use tools from linear algebra, namely, the Perron-Frobenius theory of nonnegative matrices, the Gantmacher-Krein theory of oscillation matrices, and the Schmidt-Spitzer theory for the asymptotic spectral behavior of banded Toeplitz matrices.

Key words. Faber polynomials, cyclic of index p matrices, oscillation matrices.

AMS subject classifications. 30C15, 15A48, 15A57.

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