

# Chebyshev Polynomials, Computations Using the Complex Remez Algorithm

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## Abstract

The classical Chebyshev polynomials introduced by Pafnuty Chebyshev in the 19th century came from his study of mechanical systems. These are minimal in the sense that they are the monic polynomials which deviate the least from zero on an interval.

This concept can be generalised to compact subsets of the complex plane which is the subject of my talk. I will discuss the general properties of complex Chebyshev polynomials and how these can be computed using a generalisation of the Remez algorithm due to P. Tang. I will then illustrate how we have used these computations to formulate conjectures and prove certain results on the zeros and norms of Chebyshev polynomials in the complex plane.

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