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Olof Rubin* (olof.rubin@math.lth.se), 22472 Lund, Sweden. *The Remez Algorithm and its Application to Chebyshev Polynomials.*

The original Remez algorithm was published by E. Y. Remez in 1934. It enables numerical computations of best approximations to continuous real-valued functions from a finite dimensional basis, typically polynomials. Best approximation in this case means relative to supremum-norm. The algorithm relies heavily on a property called alternation which is a characteristic of best approximations to real-valued functions. However, it is a property which complex-valued best approximations lack and hence the approach of Remez can not be used for instance in computing complex Chebyshev polynomials on curves.

I will present generalisations to the Remez algorithm developed around 1990 by Tang, Modersitzki, Fischer among others which work in computing best approximations for complex-valued functions. It seems like this algorithm has not found the applications in the study of Chebyshev polynomials for which it has the potential. I will illustrate this by giving some examples of Chebyshev polynomials on complex domains, in particular Jordan domains, computed using the algorithm. (Received August 30, 2021)