APPROXIMATE FEKETE POINTS
FOR WEIGHTED POLYNOMIAL INTERPOLATION[*]

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Abstract. We compute approximate Fekete points for weighted polynomial interpolation by a recent algorithm based on QR factorizations of Vandermonde matrices. We consider in particular the case of univariate and bivariate functions with prescribed poles or other singularities, which are absorbed in the basis by a weight function. Moreover, we apply the method to the construction of real and complex weighted polynomial filters, where the relevant concept is that of weighted norm.

Key words. approximate Fekete points, weighted polynomial interpolation, prescribed poles, weighted polynomial filters

AMS subject classifications. 41A10, 65D05, 65D15, 65E05

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