Convergence of zeros of denominators of Padé-orthogonal approximants

by

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Abstract

Rational approximation theory has been a mainstay of approximation theory from the beginning. This subject occupies a large place in the literature. One type of rational approximations (for example Padé approximation) can be classified as an independent branch of complex analysis and approximation theory. Although polynomials seem to be more familiar and comfortable, they are not such a good class of functions if one wants to approximate functions with singularities because polynomials are entire functions without singularities. Rational functions are the simplest functions with singularities. They are more powerful than polynomials at approximating functions *near singularities, with jumps,* and *on unbounded domains.* In this talk, we consider a generalization of the classical construction of Padé approximants, namely Padé-orthogonal approximants. In particular, we will discuss the relation between the convergence of poles of Padé-orthogonal approximants and the singularities of the approximated function.