

Asymptotic zero distribution for a class of multiple orthogonal polynomials

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Abstract

We establish the asymptotic zero distribution for polynomials generated by a four-term recurrence relation with varying recurrence coefficients having a particular limiting behavior. The proof is based on ratio asymptotics for these polynomials. We can apply this result to three examples of multiple orthogonal polynomials, in particular Jacobi-Piñeiro, Laguerre I and multiple orthogonal polynomials associated with modified Bessel functions K_ν . We also discuss an application to Toeplitz matrices. This is joint work with Els and Jonathan Coussement.