Riemann-Hilbert analysis for a Nikishin system

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In Hermite-Padé approximation and in the theory of multiple orthogonal polynomials, a Nikishin system of order two consists of two measures (μ_1, μ_2) on one interval $[a, b]$ such that $d\mu_2(x) = w(x) \, d\mu_1(x)$, with w the Stieltjes transform of a measure σ on an interval $[c, d]$, which is disjoint from $[a, b]$. In this talk I will give the asymptotic behavior of the type I and type II multiple orthogonal polynomials for a Nikishin system of order. We use the Riemann-Hilbert problem for multiple orthogonal polynomials and the steepest descent analysis for oscillatory Riemann-Hilbert problems to obtain the asymptotic behavior in all relevant regions of the complex plane. This is joint work with Guillermo López Lagomasino.