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Roozbeh Gharakhloo* (roozbeh.gharakhloo@colostate.edu) and **Alexander Its** (aits@iupui.edu). *A Riemann-Hilbert approach to asymptotic analysis of Toeplitz+Hankel determinants.*

In this talk I will describe the joint work with Alexander Its on the formulation and analysis of 4×4 Riemann-Hilbert problems for Toeplitz+Hankel determinants and the associated system of orthogonal polynomials, when the Hankel symbol is supported on the unit circle and also when it is supported on an interval $[a, b]$, $0 < a < b < 1$. The distinguishing feature of this work is that in the formulation of the Riemann-Hilbert problem no specific relationship is assumed between the Toeplitz and Hankel symbols. I will also talk about how one arrives at a model Riemann-Hilbert problem for Toeplitz+Hankel determinants which lies at the core of both cases of Hankel weight support (real line or the unit circle). I will also discuss the remarkable fact that how certain assumptions in a work by Estelle Basor and Torsten Ehrhardt who studied these asymptotics from an operator-theoretic approach, can resurface in the analysis of the proposed model Riemann-Hilbert problem and allow for an explicit factorization. (Received September 10, 2019)