

GENERALIZED FISHER-HARTWIG ASYMPTOTICS.  
THE RIEMANN-HILBERT APPROACH.

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We will discuss some new results concerning the Fisher-Hartwig type asymptotics for Hankel and Toeplitz determinants whose symbols have jumps and/or root singularities. The method, which is based on the asymptotic solution of the relevant Riemann-Hilbert problems, will be outlined. We will also discuss the connections to random matrices and integrable systems and, if time permits, review the other recent results obtained in the field and discuss some of its open questions.