Painlevé asymptotics for Toeplitz determinants with merging singularities

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I will discuss asymptotic expansions for Toeplitz determinants corresponding to symbols depending on a parameter t. For t positive, the symbols have two Fisher-Hartwig singularities, but as t tends to zero, the singularities merge, and at t=0, there is only one singularity left. Double scaling asymptotics for the determinants as n tends to infinity and simultaneously t tends to zero can be expressed in terms of a solution to the fifth Painlevé equation. The talk will be based on joint work with Igor Krasovsky.