

# Conférence Deift

25 juin 2009

17h-18h

175 rue du Chevaleret, Paris 13<sup>ème</sup>

**Salle I-C-1**

## *Asymptotics of Toeplitz, Hankel, and Toeplitz + Hankel Determinants with Fisher-Hartwig Singularities*

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We study asymptotics in  $n$  for  $n$ -dimensional Toeplitz determinants whose symbols possess Fisher-Hartwig singularities on a smooth background.

We prove the general non-degenerate behavior conjectured by Basor and Tracy.

We also obtain asymptotics of Hankel determinants on a finite interval as well as determinants of Toeplitz+Hankel type.

Our analysis is based on a study of the related system of orthogonal polynomials on the unit circle using the Riemann-Hilbert approach.

*This is joint work with Alexander Its and Igor Krasovsky.*