ID de Contribution: 12

Outliers of Perturbations of Banded Toeplitz Matrices

jeudi 7 mars 2024 11:20 (50 minutes)

Let $T_n(\mathbf{a})$ be a $n \times n$ Toeplitz matrix with symbol $\mathbf{a} \colon \mathbb{S}^1 \to \mathbb{C}$ given by the Laurent polynomial $\mathbf{a}(\lambda) = \sum_{k=-r}^{s} a_k \lambda^k$. We consider the matrix

 $\overline{M_n} = T_n(\mathbf{a}) + \sigma \frac{X_n}{\sqrt{n}}$, where $\sigma > 0$ and X_n is some noise matrix whose entries are centered i.i.d. random variables of unit variance. When n goes to infinity, the empirical spectral distribution of M_n converges towards a probability measure β_{σ} on \mathbb{C} . The objective of this talk is to describe, when n is large, the eigenvalues of M_n in closed regions of \mathbb{C} \support (β_{σ}) which we will call the outlier eigenvalues.

This is a joint work with Charles Bordenave and Fran\c{c}ois Chapon.

Orateur: Prof. CAPITAINE, Mireille (IMT)