DEPARTMENT OF MATHEMATICS & STATISTICS

Friday
November 8, 2019
4:10 - 5:00 pm AG 1030

Reception before the talk:
RH 261 at 3:30 pm

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Outlying Eigenvalues of Random Matrices

Abstract:

Given two independent large random matrices A and B, the bulk of the eigenvalues of A+B or, more generally, of an arbitrary polynomial p(X,Y) can be predicted with great accuracy if, for instance, A has an invariant distribution relative to unitary equivalence. We will discuss work (joint with Belinschi, Fevrier, and Capitaine) concerning the eigenvalues outside the bulk, also called outliers. These can also be predicted under certain circumstances, and their positions are related with those of the outliers of A and B through the intermediary of certain analytic functions that appear in noncommutative probability theory. Most of the talk will be about sums. If time permits, we will discuss how the problem for arbitrary polynomials can be solved using sums of related random matrices.