Mathematics and CS Seminar

Eigenvectors of integrable models of non-Hermitian random matrices

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Right and left eigenvectors of non-Hermitian matrices form a bi-orthogonal system, to which one can associate homogeneous quantities known as overlaps. The matrix of overlaps quantifies the stability of the spectrum, and characterizes the joint eigenvalues increments under Dyson-type dynamics. Overlaps first appeared in the physics literature: Chalker and Mehlig calculated their conditional expectation for complex Ginibre matrices (1998). For the same model, we extend their results by deriving the distribution of the overlaps and their correlations (joint work with P. Bourgade). Similar results hold for quaternionic Gaussian matrices, as well as matrices from the spherical and truncated unitary ensembles.

Tuesday, August 20, 2019 10:00am - 12:00pm

Heinzel Seminar Room / Office Bldg West (I21.EG.101)

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