

# Ginibre-type determinantal processes

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We consider the Landau Hamiltonian on  $L^2(\mathbf{R}^2)$ , which is the Schrödinger operator with a constant magnetic field in  $\mathbf{R}^2$ . It is known that its spectrum consists of only eigenvalues with infinite multiplicity, which is so-called the Landau levels. The eigenspace corresponding to the lowest eigenvalues (the first Landau level) can be identified with the space of  $L^2$ -entire functions with respect to the complex gaussian measure, and the other eigenspaces corresponding to higher Landau levels are obtained from the first one by applying a creation operator repeatedly. Determinantal point processes can be attached to closed subspaces of the space of square integrable functions. For instance, the determinantal process associated with the first Landau level is known as the Ginibre point process on  $\mathbf{C}$ , which is the eigenvalue process of certain complex Gaussian matrix ensemble. In this talk, I will discuss the determinantal processes attached to higher Landau levels.

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