

Large deviations for outliers of deformed GOE matrices

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Recent work of Boursier--Guionnet has established a large deviation principle for the largest eigenvalue of certain spiked Gaussian matrices connected to the landscape complexity for spin glass models. We provide two alternative perspectives on the rate function, expressing it as:

- 1) the minimal action for an obstacle problem, and
- 2) the area of a domain determined by the spike and a "spectral curve" associated to the unspiked matrix model.

Both perspectives have parallels in the study of dimer models.

Based on joint work with Jeanne Boursier.