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Matrix Geometry and Coherent States

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Some matrix models have been proposed as a non-perturbaive formulation of string theories. In the matrix model formulation of string theories, configurations of strings or D-branes are described by a set of Hermitian matrices. Here, we propose a new class of observables in matrix models, which are made of the Hermitian matrices and encode geometric information of the strings or D-branes. By performing a Monte Carlo simulation and computing those observables for a simple toy model of a bosonic matrix model, we demonstrate how we can see the geometric properties of the strings from the matrix configurations.

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