

## Matrix Model for Superstring/M-theory



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### Fortuity with a single matrix

*Monday, December 1, 2025 10:00 AM (1 hour)*

It has recently been proposed that supersymmetric black hole microstates exhibit “fortuity”: their very existence depends sensitively on the finite, precise values of  $N$ , the number of degrees of freedom in the dual theory. In this talk, after reviewing the core ideas of fortuity in both large- $N$  gauge theories and toy models such as the SYK model, I will describe a simple matrix quantum-mechanical model containing a single adjoint fermion. I will show that the model is exactly solvable while containing many fortuitous states. Using the model, I will sketch how properties of fortuity - particularly the sensitivity to  $N$  - can be seen using techniques such as the unitary matrix integral. The talk will be based on arXiv:2511.00790.

**Presenter:** CHEN, Yiming

**Session Classification:** Session