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Stability analysis of a non-Unitary CFT

Thursday 7 July 2022 11:00 (1 hour)

I will argue for the instability of the O(N) Wilson-Fisher fixed point above four dimensions, using the epsilon expansion.
By computing the lowest operator dimension in the rank-Q symmetric rep in the double-scaling limit where epsilon*Q fixed, I will show that its imaginary part never vanishes for any epsilon*Q.
The mechanism for the imaginary part is different for small and large epsilon*Q, which I will explain.
Since this type of phenomena is widely seen in matrix models and its large-N phase transitions, I will conclude by pointing out possible (qualitative) connections between large charge sectors of CFTs and matrix models.

Presenter: WATANABE, Masataka (Weizmann Institute of Science)