

Measurement-induced phase transition and KPZ physics in classical and quantum single-body systems

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The tension created by the interplay of the contrary forces of chaos and measurements can lead to fascinating emerging phenomena, as exemplified by the recently discovered Measurement-induced Phase Transitions (MiPT) in quantum chaotic many-body systems undergoing continuous or projective measurements.

In this talk, I will demonstrate that this tension still remains when the problem is reduced to a single-body for both classical and quantum systems and that salient features of this problem can be understood by exploiting a connection with KPZ physics in the weak monitoring/short time/smooth interface regime.

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