

# An underlying link for scaling of fluctuations in growth fronts, fracture lines, strong localization, ...

Mehran Kardar

*Physics Department, MIT, Cambridge, MA 02139, USA*

In the 1990s I gave several versions of this seminar, enumerating the widely different contexts in which the KPZ equation appears. Considering the advances and refinements ushered in the last decade, the seminar retains some historical significance, and can also point to interesting unsolved puzzles. The original abstract reads:

*The evolution of growth fronts is governed by a nonlinear generalization of the diffusion equation. The patterns formed in deterministic growth, and the self-similar scaling of fluctuations in stochastic growth are characterized. There is a surprising link to sums over paths in random media. This provides a connection to optimized routes, tunneling of strongly localized electrons, and a number of other examples which will be discussed.*