

Growth and Pattern Formation in the KPZ equation

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A nonperturbative weak noise scheme is applied to the Kardar-Parisi-Zhang equation for a growing interface in *all* dimensions. It is shown that the growth morphology can be interpreted in terms of a dynamically evolving texture of localized growth modes with superimposed diffusive modes. Applying Derrick's theorem it is conjectured that the upper critical dimension is four [1, 2].

[1] H.C. Fogedby, *Phys. Rev. Lett.* **94**, 195702 (2005).

[2] H.C. Fogedby, *Phys. Rev.* **E73**, 031104 (2006).