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Effect of noise on traveling fronts

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Noisy perturbations of reaction-diffusion equations arise naturally when approximating by more basic models involving particles. Traveling fronts are the most important qualitative feature of such systems and we describe how they are affected by the noise in the simplest case of the one dimension KPP equation. In particular, we describe some of the ideas of a rigorous proof of the Brunet-Derrida asymptotics for the front speed with small noise.

This is joint work with Carl Mueller and Leonid Mytnik.