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Effect of weak dissipative disorder on front formation in pattern forming systems AVNER PELEG, Department of Mathematics, The University of Arizona, Tucson, AZ 85721, USA — We study the effect of weak disorder in the linear gain coefficient in pattern forming systems described by the cubic-quintic nonlinear Schrödinger equation. We calculate the distribution functions of the front position and amplitude and find that both distribution functions are strongly different from Gaussian. We show that the distribution of the front amplitude is singular at the maximum value of the amplitude, while the distribution of the front position has a lognormal form. These predictions are in very good agreement with our numerical simulations. Implications of the results for other types of dissipative disorder are discussed.

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