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Gino Biondini*, Department of Mathematics, Math Bldg, Putnam Way. *Universal nature of the nonlinear stage of modulational instability.*

After reviewing how how modulational instability (MI) manifests itself within the inverse scattering transform for the focusing nonlinear Schrodinger (NLS) equation, I will characterize the nonlinear stage of MI by computing the long-time asymptotics of solutions of the focusing NLS with initial conditions that are a small perturbation of a constant background. In particular, I will show that such asymptotic behavior is universal. Namely, for generic perturbations, the xt -plane divides into three regions for long times: a left far field and a right far field, in which the solution equals the boundary condition to leading order, and a central region in which the asymptotic behavior is described by a slowly modulated elliptic solution. (Received February 23, 2016)