

On the Formation of Rogue Waves

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The nonlinear Schrödinger equation (NLSE) is a central model of nonlinear science, applying to hydrodynamics, plasma physics, molecular biology and optics. The NLSE admits several analytic solutions, but one in particular describing a localized soliton on a finite background is of intense current interest in the context of understanding the physics of extreme waves. Recent results related to this analytic solution will be presented.