

The influence of parametric forcing on the non-equilibrium dynamics of wave patterns

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We investigate analytically and numerically the effect of heterogeneities on the non-equilibrium dynamics of wave patterns in the framework of complex Ginzburg-Landau equation with parametric, non-resonant forcing periodic in space and time. The effect of modulations on the dispersion properties of traveling waves is analyzed, and wave solutions with essentially anharmonic spatial structure are found. We consider the influence of modulations on the development of an intermittent chaos and show that the parametric forcing may completely suppress the appearance of chaotic patterns. The results obtained are applied to describe the dynamics of thermal Rossby waves influenced by surface topography.