Stable Stationary Solitons of the One-Dimensional Modified Complex Ginzburg-Landau Equation

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We report on the existence of a new family of stable stationary solitons of the one-dimensional modified complex Ginzburg-Landau equation. By applying the paraxial ray approximation, we obtain the relation between the width and the peak amplitude of the stationary soliton in terms of the model parameters. We verify the analytical results by direct numerical simulations and show the stability of the stationary solitons. – PACS numbers: 42.65.Tg, 42.81Dp, 42.65Sf.

Key words: One-Dimensional Modified Complex Ginzburg-Landau Equation; Existence Condition of Stationary Solitons; Numerical Simulation.