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Generation of fundamental soliton in the presence of initial linear chirp

Tomasz Kaczmarek

Keywords

split-step Fourier method, soliton, chirp, nonlinear Schroedinger equation

Abstract

Generation of fundamental soliton in nonlinear optical fiber from chirped pulses of different initial shapes is discussed. Results of numerical calculations having in view solution of nonlinear Schrödinger equation for complex initial condition using split-step Fourier method are presented. Initial shape-dependent critical value of the chirp parameter is determined. Critical value is such a value of the chirp parameter at which generation of soliton in optical fiber is impossible.