Determination of FWHM for soliton trapping

Abstract

In this study an interesting system in which a bright and dark soliton pulse can be stopped inside a nonlinear waveguide is presented. Here, we propose a system consisting of a series of ring resonators for optical trapping within a nonlinear waveguide. The bright and dark solitons can be controlled and slowed down within the waveguide. The FWHM for the output signals are calculated and used as an optical memory. Bright and dark soliton behaviors within a micro and nano ring resonator are also investigated and described. The required pulse is filtered and amplified, can be controlled and localized within the system. The localized bright and dark solitons are stopped by controlling the input power, which means that the photon stopping can be controlled by light in a ring resonator.