PROPAGATION OF TRAIN OF CHIRPED VECTOR SOLITONS IN BIREFRINGENT OPTICAL FIBERS WITH VARIABLE COEFFICIENTS

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Abstract : A propagation of train of chirped vector solitons in birefringent optical fibers with variable coefficients is studied numerically using the compact split step Padé scheme (CSSPS). A negative chirp makes the managed chirped vector soliton broadening, while; a positive chirp leads to a soliton compression. The effect of the chirp on the vector soliton temporal width of an amplification system ($? > 0$) is greater than that in a loss system ($? < 0$). The evolution of train of managed vector solitons is submitted not only to the effect of the chirp, but also to the interaction between the adjacent vector solitons.

Keywords : Train of vector soliton, chirped soliton, optical fibers, compact split step Padé scheme, coupled higher-order nonlinear Schrodinger equations with variable coefficients, temporal waveform.