NUMERICAL STUDY OF FEMTOSECOND SIGNAL SPECTRAL SELF-COMPRESSION

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The nonlinear process of ultrashort pulse spectral self-compression (self-SC or soliton effect spectral compression) in a medium with anomalous dispersion and weak nonlinearity is studied numerically. Up to 33x self-SC is shown for Gaussian, $sech^2$, super-Gaussian, as well as for randomly amplitude- and phase-modulated pulses. The study shows that the proposed new technique is useful for the radiation noise suppression.