EXPERIMENTAL DEMONSTRATION OF SPECTRAL SELF-COMPRESSION OF FRACTION OF SUPERCONTINUUM RADIATION

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The process of ultrashort pulse spectral self-compression (self-SC) is demonstrated experimentally. The combined effect of negative dispersion and weak nonlinearity, required for this process, is achieved in both standard single-mode fiber at wavelengths of 1.3 μm and hollow core fiber at 800 nm. To reach the wavelengths in range of 1.3 μm, broadband supercontinuum is generated from the femtosecond laser + amplifier source at 1030 nm. The self-SC of fraction of supercontinuum spectrum resulted in ~4x spectral narrowing of the signal.