119
标题: Optical frequency comb generation using a new compacted hybrid Raman Bi-based erbium doped fiber amplifier in a linear cavity
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摘要: A new compacted hybrid Raman bismuth-based erbium doped fiber amplifier (Bi-EDFA) is demonstrated to generate an optical frequency comb source via Brillouin seed signals. A highly nonlinear Bi-EDF of length 2.15 m is incorporated as both the Raman and Bi-EDF gain medium. Using a Brillouin pump with a wavelength at the maximum Raman gain but 2 nm lower than the Bi-EDFA free-running wavelength region, an optical frequency comb having 55 Brillouin Stokes lines is generated. The peak value of the Raman gain is about 6 x 10(-13) m W-1 at the wavelength downshifted in frequency by about 14.2 THz (473 cm(-1)). This experiment suggests that by using a Bi-EDF instead of an EDF in a conventional EDFA, higher amplification can be obtained when the resulted Raman gain overlaps with the intense erbium gain prepared in this fiber.
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