

Impact of four wave mixing on OSNR of multiwavelength Brillouin-erbium fiber laser

ABSTRACT

An experimental investigation on the optical signal to noise ratio (OSNR) of a multiwavelength Brillouin erbium fiber laser (BEFL) without and with four wave mixing (FWM) effect is demonstrated. The BEFL output before and after an 11 km dispersion compensating fiber is compared in terms of OSNR. It is found that FWM does affect the OSNR of the channels. For the first few channels, the OSNR is lower as compared with the case without FWM effect but for the last few channels, the OSNR is higher.

Keyword: Brillouin erbium fiber laser; Four wave mixing