

Direct experimental measurement of SRS-induced spectral tilt in multichannel multispan communication systems

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Abstract

Nonlinear SRS-induced tilt of the spectrum of a multichannel DWDM signal is studied experimentally in standard singlemode fibreoptic communication lines. It is found that at a fixed spectral bandwidth and total power the nonlinear SRS tilt is independent of the number of channels, radiation source type, and the initial tilt (positive or negative). In a multispan line consisting of identical spans the total nonlinear tilt of the spectrum (in dB) is proportional to the number of spans, spectral width and total power.

Keywords: *DWDM, stimulated Raman scattering, Raman-induced tilt, fibreoptic communication line.*