Overview of Stimulated Brillouin Scattering Effect and Various Types of Method to Eliminate this Effect

Authors:
Fahmida Hossain Tithi
M. S. Islam
Md. Tawhidul Anwar Tanna

Abstract

Stimulated Brillouin scattering (SBS) is a resonant nonlinear optical interaction with the material that results in transmitted light being scattered back towards the input. Although high power lasers are available to overcome the intrinsic loss of standard single mode optical transmission fibers (0.2 to 0.3 dB/km) but SBS places an upper limit on the optical power that can be transmitted through the link. Usually, SBS normally has a lower threshold power (~1.4 mW) than other nonlinear effects. In this paper we see the SBS effect in optical fiber transmission system and different types of methods to eliminate this effect. Here we propose two new approaches to eliminate this effect.

References

- Shiraki K., Oshani M. and Tateda T., "Suppression of stimulated Brillouin
scattering in a fiber by changing the core radius.


Index Terms
Keywords

Stimulated Brillouin scattering  intrinsic loss  threshold power  nonlinear effects.