

Dispersion Definitions

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Revision 0.06 Dispersion Definition

dispersion:

- (1) a term in this document used to denote pulse broadening and distortion from all causes. The two causes of dispersion in optical transmissions are modal dispersion, due to the difference in the propagation velocity of the propagation modes in a multimode fiber, and chromatic dispersion, due to the difference in propagation of the various spectral components of the optical source. Similar effects exist in electrical transmission lines.
- (2) (2) Frequency dispersion caused by a dependence of propagation velocity on frequency, that leads to a pulse widening in a system with infinitely wide bandwidth. The term 'dispersion' when used without qualifiers is definition (1) in this document.

Revision 0.06 Dispersion Definition - Problems

dispersion:

- (1) a term in this document used to denote pulse broadening and distortion from all causes. The two causes of dispersion in optical transmissions are modal dispersion, due to the difference in the propagation velocity of the propagation modes in a multimode fiber, and chromatic dispersion, due to the difference in propagation of the various spectral components of the optical source. Similar effects exist in electrical transmission lines.
- (2) (2) Frequency dispersion caused by a dependence of propagation velocity on frequency, that leads to a pulse widening in a system with *infinitely wide bandwidth*. The term 'dispersion' when used without qualifiers is definition (1) in this document.

Revision 0.08 Dispersion Definition

dispersion:

a term in this document used to denote pulse broadening and distortion from all optical causes. The causes of dispersion in optical transmissions are modal, chromatic and polarization mode dispersion. Modal dispersion is caused by the difference in the propagation velocity of the guided modes in a multimode fiber. Chromatic dispersion, due to the difference in propagation of the various spectral components, of the signal and optical source. Polarization mode dispersion is caused by fiber defects, that makes the propagation velocity dependent of the light polarization state.

Proposed Definition for consideration...

dispersion:

- (1) A term in this document used to denote pulse broadening and distortion from all causes.
- (2) Frequency dispersion caused by a dependence of propagation velocity on frequency, that leads to a pulse widening in a system with infinitely wide bandwidth.

The term 'dispersion' when used without qualifiers is definition (1) in this document.

The causes of dispersion in optical transmissions are modal, chromatic and polarization mode dispersion. Modal dispersion is caused by the difference in the propagation velocity of the guided modes in a multimode fiber. Chromatic dispersion, due to the difference in propagation of the various spectral components, of the signal and optical source. Polarization mode dispersion is caused by fiber defects, that makes the propagation velocity dependent of the light polarization state.

Similar effects exist in electrical transmission lines.