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(54) Title: METHOD AND SYSTEM FOR DISPERSION MAPS AND ENHANCED DISTRIBUTED GAIN EFFECT IN LONG HAUL TELECOMMUNICATIONS

(57) Abstract: A system and method of providing a transmission span that compensates for signal attenuation, dispersion, and nonlinearity of an optical signal communicated between two line units of a transmission link includes dividing the transmission span into a plurality of fiber segments and selecting a particular fiber for each of the segments. The fiber selection and arrangement of fibers within the span can be selected in accordance with the nonlinearity, dispersion conditions, and distributed gain conditions of the constituent fibers. In a three segment map, the first segment can provide low non linearity, the third segment can provide distributed gain, and the second segment can compensate for the dispersion of the first and third segments. The span can be used, e.g., for distributed Raman amplification. The span can alternatively include a two segment map, a four segment map, or a map with additional segments.



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