Abstracts

An Electromagnetic Analysis of the Transmission Properties of Radial Offsets in Round Optical Fibers

E. Bianciardi and V. Rizzoli. "An Electromagnetic Analysis of the Transmission Properties of Radial Offsets in Round Optical Fibers." 1979 MTT-S International Microwave Symposium Digest 79.1 (1979 [MWSYM]): 469-471.

The transmission loss of a radial offset in a round optical fiber is computed by a rigorous electromagnetic approach. The e.m. field in both the incoming and outgoing fibers is developed into a sum of modes and the power transmission properties of the offset are established on a mode-to-mode basis. This gives an extremely accurate and complete picture of the physical phenomenon, whose validity is confirmed by the very close agreement with available experimental data. The theory can also account for the reflected Power which may be non-negligible for fibers with a large numerical aperture.

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