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Pulse Delay Chromatic Dispersion Measurements in Single Mode Fibre

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Abstract :

In recent years, there has been a rising demand for high bandwidth in long haul fibres to assist with high-speed data transmission. Chromatic dispersion limits high-speed data transmission making it essential to perform chromatic dispersion measurements. Chromatic dispersion measurements play an important role during the manufacturing processes of the optical fibre, in characterizing the different types of optical fibre, when designing optical networks and in transmission penalty estimations. In this paper, a unique laboratory setup based on the pulse delay technique was used to characterize the chromatic dispersion in a single mode fibre. The chromatic dispersion of a 6.1km long G.652 single mode fibre was measured within the 1550nm to 1553nm wavelength range. The dispersion values obtained were in the region of 15.3-20.0ps/nm.km, which compares well with the theoretical values for the G.652 optical fibre.

Award :

Yes

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MSc

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Paper :

Yes

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