Theoretical Analysis and Measurement of the Effects of Fibre Twist on the Polarisation Mode Dispersion of Optical Fibres

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Abstract

We present an analytical model of the *Polarisation Mode Dispersion (PMD)* of uniform linearly birefringent fibres subject to elastic twist which shows there exists a particular twist rate which nulls the PMD. At high twist rates the PMD is dominated by the dispersion of the twist-induced circular birefringence. Experimental results confirm the predictions.