

373

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Title:Continuous-wave parametric oscillation in polarisation-maintaining optical fibre

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Abstract:Continuous-wave parametric oscillation in a polarisation-maintaining optical fibre has been achieved for the first time using polarisation phase matching. Up- conversion with a frequency shift of $\sim 8:6$ THz has been demonstrated experimentally. The single-pass optical power generated at 1017 nm in a 85-m-long Nufern PM980-XP fibre exceeded 40 mW. The conversion efficiency was 3.3 %, which is an order of magnitude higher than that reported previously for cw parametric up-conversion in the 1-lm spectral region. We compare theoretical predictions with experimental data and analyse factors that may influence output power saturation with increasing signal and pump powers.

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