EFFICIENCY OF TWO-WAVE MIXING VIA DYNAMIC BRAGG GRATINGS IN Er-DOPED OPTICAL FIBERS

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S u m m a r y

Efficiency of dynamic Bragg gratings recorded in Er-doped optical fibers via spatial hole burning in the configuration of two-wave mixing is evaluated. The analysis performed in the approximation of low grating contrast and undepleted recording waves takes into account a large-scale saturation of fiber optical absorption. Direct comparison with the experimental results obtained on transient and stationary two-wave mixing (TWM) in an Er-doped fiber at 1549 nm resulted in disagreement by a factor $\approx$7, which cannot be explained by the polarization mismatch of recording waves only.