



Degenerate multiwave mixing using Z-scan technique

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Résumé en anglais	<p>This study deals with a multiwave mixing experiment using Z-scan technique. We show that it is possible to simplify the complex degenerate four-wave mixing (DFWM) experimental setup in order to characterize nonlinear materials. One object composed of three circular apertures is used as an input in a 4 f coherent imaging system. When the nonlinear material is moved around the focus, we observe the variations of the forward fourth wave at the output as well as other diffracted waves. Experimental and simulated images are presented here to validate our approach. We show also that this method increases significantly the sensitivity of the measurement compared to DFWM. We provide a simple quadratic relation that allows the characterization of the cubic optical nonlinearity.</p>
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Liens

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