Handling of quasi-Gaussian beams by phase plates: far-field simulation

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Effects of phase plates on focused laser beams are studied numerically. Gaussian beams are simulated when they pass through several kinds of phase device (random phase plates, phase gratings, etc.). Partially coherent and aberrated beams are also considered. Their control by phase devices is analyzed. In particular this work is devoted either to reducing the intensity transverse modulations on the spot region, which are able to excite filamentation instability in plasmas, or to producing such modulations in a controllable way in order to investigate filamentation accurately.

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