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Coherent combination of laser radiations and fringe contrast ratios on far field patterns

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Keywords

beam combination, Fourier-optics, dark fringes, contrast ratio

Abstract

Fourier optics method has been used to study the far field of coherently combined laser beams. And an explicit expression of the far field has been derived for the case when emitters are positioned on apexes of multiple regular polygons with a common center. The statistical influence of the relative phases between constituent waves has been investigated and an expression for the fringes contrast ratio has been deduced with the aid of Ergodic hypothesis.

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