Abstracts

Application of the Beam Mode Expansion to the Analysis of Noise Reduction Structure (Short Papers)

K. Tanaka, M. Tanaka and O. Fukumitsu. "Application of the Beam Mode Expansion to the Analysis of Noise Reduction Structure (Short Papers)." 1975 Transactions on Microwave Theory and Techniques 23.7 (Jul. 1975 [T-MTT]): 595-598.

The beam mode expansion method used to discuss the distraction problem by an aperture is applied to the analysis of the noise reduction structure consisting of two aperture stops. The incident field is a fundamental wave beam whose amplitude distribution is Gaussian. The transmitted field through the structure can be represented as a sum of beam mode functions and is regarded as a signal. The noise which is originated from the spontaneous emission is added to the incident Gaussian wave beam. The signal-to-noise ratio (SNR) in the output is discussed and optimum conditions are obtained numerically.

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