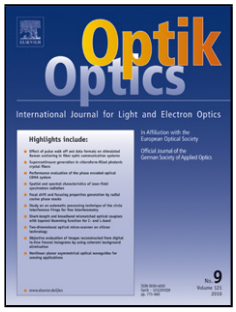

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Mode coupling interaction for transverse electric (TE) fields in a groove doublet configuration

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Abstract:

Based on the waveguide mode (WGM) method, the formulation of total scattered field including coupling interaction has been extended from the TM field to TE field. The calculated results show that there exists a damped oscillation with increasing groove spacing. For the case of two subwavelength grooves, the coupling interaction for the TE case is not sensitive to the incident angle and scattering angle and weaker than that for the TM case. The angle dependence for the TE field for two subwavelength is asymmetric while that for the TM field is symmetric. We offer a road to study and design metallic gratings in Terahertz and microwave region.

Keywords:

Scattering, rough surfaces; Diffraction and gratings; Gratings; Far infrared or terahertz