Abstracts

Design-Oriented Parametrization of Truncated Periodic-Strip Gratings

L. Carin and L.B. Felsen. "Design-Oriented Parametrization of Truncated Periodic-Strip Gratings." 1992 Microwave and Guided Wave Letters 2.9 (Sep. 1992 [MGWL]): 367-369.

Spectral domain asymptotic are used to develop a hybrid (ray)-(Floquet mode) parametrization that models time-harmonic plane-wave interaction with a truncated grating of periodically spaced, coplanar, infinitesimally thin, perfectly conducting strips in free space. By distinctly displaying the edge effects as well as the truncated Floquent mode contributions from the body of the grating, the model-which is valid in the near and far zones-contains the necessary ingredients for finite-grating design; the truncated Floquent modes are based on those for the finite grating. Plane-wave diffraction results computed from the model are shown to agree very well with numerical reference data generated by a (spectral domain)-(method of moments) algorithm.

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