Abstracts

Time-Domain Design-Oriented Parametrization of Truncated Periodic Strip Gratings

L. Carin, L.B. Felsen and M.R. McClure. "Time-Domain Design-Oriented Parametrization of Truncated Periodic Strip Gratings." 1993 Microwave and Guided Wave Letters 3.4 (Apr. 1993 [MGWL]): 110-112.

Asymptotic methods are used to develop an algorithm that parametrizes time-domain plane-wave interaction with a truncated grating of periodically spaced, perfectly conducting strips in free space. By distinctly displaying the edge effects as well as the truncated Floquet mode contributions from the body of the grating, the model contains the necessary building blocks for time-domain, finite-grating design. Short-pulse, plane-wave diffraction results computed from the model are shown to agree well with numerical reference data, and salient properties of the time-domain Floquet-mode constituents in the model are highlighted via time-frequency representations.

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