Abstracts

Guided Waves Along a Metal Grating on the Surface of a Grounded Dielectric Slab

F.H. Bellamine and E.F. Kuester. "Guided Waves Along a Metal Grating on the Surface of a Grounded Dielectric Slab." 1994 Transactions on Microwave Theory and Techniques 42.7 (Jul. 1994, Part I [T-MTT]): 1190-1197.

The propagation of guided waves along a metal grating lying on a grounded dielectric substrate is studied. Hitherto, investigation of the properties of such waves has been restricted to directions of propagation perpendicular to or nearly parallel to the strips of grating. Averaged boundary conditions for the fields at the grating are used here to simplify the analysis, and are expected to yield accurate results for grating periods that are sufficiently small compared to a wavelength. Comparisons made with more exact computations in the literature are shown to be good. The results have potential application for microwave and millimeter wave waveguides, slotted microstrip antennas, and circuit elements.

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