Correction to "On the Question of Computation of the Dyadic Green's Function at the Source Region in Waveguides and Cavities"

Y. RAHMAT-SAMII

In the above paper,[1] the following typographical errors should be corrected.

On page 763, the expression following (13) needs a change of sign and should read as

$$\Gamma_{nm}^2 = -k^2 + \left(\frac{n\pi}{a}\right)^2 + \left(\frac{m\pi}{b}\right)^2.$$

On the same page, the last term in (17) should be

$$\frac{n\pi}{a}\cos\frac{n\pi x}{a}\sin\frac{n\pi x'}{a}\cos\frac{m\pi y}{b}\cos\frac{m\pi y'}{b}\hat{z}\hat{y}.$$

On page 764, the right-hand side of both (26) and (28) should be multiplied by a minus sign.

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[1] Y. Rahmat-Samii, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-23, pp. 762-765, Sept. 1975.

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Computer Program Descriptions

Transmission From a Rectangular Waveguide into Half Space Through a Rectangular Aperture

PURPOSE: The program calculates the admittance seen by the waveguide, the tangential electric field in the aperture, and the radiation gain patterns for a rectangular waveguide feeding a rectangular aperture in a perfectly conducting plane of infinite extent.

LANGUAGE: Fortran IV.

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AVAILABILITY: ASIS-NAPS Document No. 03178. Also available from the authors as a report [1]. Card decks are available from the authors at a cost of $15.00.

DESCRIPTION: The problem being considered is illustrated in Fig. 1. It consists of a rectangular waveguide of arbitrary dimensions exciting half space through a rectangular aperture of arbitrary dimensions within the waveguide cross section. The half space is bounded by a perfectly conducting plane of infinite extent.

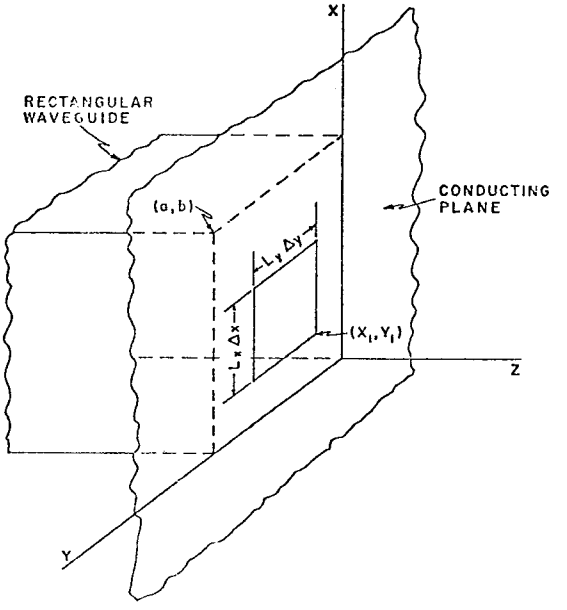

Fig. 1. A rectangular waveguide radiating through a rectangular aperture into half space bounded by an electric conductor.

The method of solution is that of the generalized network formulation [2]. This consists of dividing the problem into two regions by covering the aperture with an electric conductor and placing the magnetic current $\boldsymbol{M} = \boldsymbol{n} \times \boldsymbol{E}$ on the waveguide side of this conductor and $-\boldsymbol{M}$ on the half-space side of this conductor. By having $+\boldsymbol{M}$ on one side and $-\boldsymbol{M}$ on the other side

Manuscript received July 15, 1977.

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