

CORRIGENDUM

“Dyadic Green’s Functions for Cylindrical Waveguides
with Moving Media”

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As the result of an error the eigenfunction expansion of the dyadic Green’s functions discussed in the above paper for both the rectangular waveguide and the circular waveguide as described by Eqs. (25) and (31) are not correct. The correct expressions should be:

$$\begin{aligned} \bar{\bar{G}}^{(b)}(\bar{\mathbf{R}}/\bar{\mathbf{R}}') &= \frac{ia^3}{x_0y_0} \sum_m \sum_n \frac{2 - \delta_0}{k_c^2 k_g} [\bar{\mathbf{M}}_{emn}(\pm k_g) \bar{\mathbf{b}} \cdot \bar{\mathbf{M}}'_{emn}(\mp k_g) + \\ &+ \bar{\mathbf{N}}_{omn}(\pm k_g) \bar{\mathbf{b}} \cdot \bar{\mathbf{N}}'_{omn}(\mp k_g)] - \frac{1}{k^2} \delta(\bar{\mathbf{R}} - \bar{\mathbf{R}}')_{zz} \end{aligned} \quad (25)$$

and

$$\begin{aligned} \bar{\bar{G}}^{(b)}(\bar{\mathbf{R}}/\bar{\mathbf{R}}') &= \frac{ia^3}{4\pi} \sum_n (2 - \delta_0) \left[\sum_{r_m} \frac{1}{\eta^2 I_\eta k_\eta} \bar{\mathbf{M}}_{e_{nn}}(\pm k_\eta) \bar{\mathbf{b}} \cdot \bar{\mathbf{M}}'_{e_{nn}}(\mp k_\eta) + \right. \\ &+ \left. \sum_{\xi_m} \frac{1}{\xi^2 I_\xi k_\xi} \bar{\mathbf{N}}_{e_{n\xi}}(\pm k_\xi) \bar{\mathbf{b}} \cdot \bar{\mathbf{N}}'_{e_{n\xi}}(\mp k_\xi) \right] - \frac{1}{k^2} \delta(\bar{\mathbf{R}} - \bar{\mathbf{R}}')_{zz} \end{aligned} \quad (31)$$

where

$$\begin{aligned} I_\eta &= \frac{1}{2\eta^2} (\eta^2 r_0^2 - n^2) J_n^2(\eta r_0) \\ I_\xi &= \frac{r_0^2}{2\xi^2} \left[\frac{\partial J_n(\xi r_0)}{\partial r_0} \right]^2. \end{aligned}$$

A detailed discussion of the derivation of these expressions is given in a technical report [1], copies of which may be obtained from one of the authors (C-T. T.).

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REFERENCE

- [1] Tai, C-T., "On the eigenfunction expansion of the dyadic Green's function," Techn. Rep. 011136-1-T, Radiation Lab.; Univ. of Michigan, 1973.