Uniform physical theory of diffraction equivalent edge currents for truncated wedge strips -
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New uniform closed-form expressions for physical theory of diffraction equivalent edge currents are derived for truncated incremental wedge strips. In contrast to previously reported expressions, the new expressions are well behaved for all directions of incidence and observation and take a finite value for zero strip length. This means that the expressions are well suited for implementation in general computer codes. The new expressions are expressed as the difference between two terms. The first term is obtained by integrating the exact fringe wave current on a wedge along an untruncated incremental strip extending from the leading edge of the structure under consideration. The second term is calculated from an integration of the asymptotic fringe wave (FW) current along another untruncated incremental strip extending from the trailing edge of the structure. The new expressions are tested numerically on a triangular cylinder and the results are compared with those obtained using the method of moments and the previously reported expressions.

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