Corrections to "Numerical Computation of Scattering from a Perfectly Conducting Random Surface"

R. M. AXLINE AND ADRIAN K. FUNG, SENIOR MEMBER, IEEE

Several errors have been found in the above paper.[1] In the abstract, Tukey's name was misspelled. In the last paragraph of page 483, [1] should have been [*I*] in two places. To be consistent with (4), the left-hand sides of (3), (6), and (7) should have been $E(x_i)$. In the equation between (7) and (8), the argument of I^* should have been x. The last sentence, first column of page 485 should have read, "That is, $G(\Delta\omega_0/2)$ . . .". Equations (12a) and (12b) should have been interchanged for proper correspondence with (11a) and (11b). The sentence before (15) should have read, ". . . where $B(x)$ is the gate function of width $[-D/2, D/2]$, whose Fourier transform (evaluated at $\omega = 2k \sin(30^\circ) = k$) is . . . ". Similarly, (16) was an evaluation of $\mathbf{G} * \mathbf{B}$ at $\theta = 30^\circ$. The last line, second column of page 486 should have read ". . . $\omega_b = 2k \sin \theta_b$." The sampling theorem was applied incorrectly in arriving at (18) and (19). These equations should have read as follows:

$$1/\Delta x \geqslant \omega_b/\pi = 2k \sin \theta_b/\pi,$$

$$\Delta x \leqslant \lambda/(4 \sin \theta_b), \tag{18}$$

and

$$1/\Delta x \geqslant \omega_b/\pi = 2/(\pi l),$$

$$\Delta x \leqslant \pi l/2. \tag{19}$$

Equation (19) results from defining spectral width to be the e^{-1} point. If we define a somewhat more realistic spectral width, viz., that frequency corresponding to a decay of e^{-n} where $n > 1$, we must require $\Delta x \leqslant \pi l/(2n)$.

R. M. Axline was with the University of Kansas Center for Research, Inc., Lawrence, KS. He is now with Sandia National Laboratories, Albuquerque, NM 87185.

A. K. Fung is with the Department of Electrical Engineering, University of Kansas, Lawrence, KS 66045.

[1] R. M. Axline and A. K. Fung, *IEEE Trans. Antennas Propagat.*, vol. AP-26, pp. 482–488, May 1978.

Comments on "A High Gain Dielectric Loaded Biconical Horn for Circular Polarization"

P. L. GUIGUE, MEMBER, IEEE

In the above paper[1] reference [2] is incorrect, and the correct reference should have been as follows

[2] M. de Vecchis, M. Aubin, P. L. Guigue, and P. Reymond, "A biconical horn for circular polarization," *Microwave J.*, vol. 17, no. 6, pp. 20B–20D, June 1974.

The author is with the Laboratoire d'Antennes et Rayonnement, Université de Rennes, 35042 Cedex, Rennes, France.

[1] R. A. Nair, A. K. Kamal, and S. C. Gupta, *IEEE Trans. Antennas Propagation*, vol. AP-27, no. 6, pp. 860–861, Nov. 1979.

Correction to "Problems and Solutions Associated with Prony's Method for Processing Transient Data"

MICHAEL L. VAN BLARICUM, MEMBER, IEEE, AND RAJ MITTRA, FELLOW, IEEE

It has been pointed out by S. K. Chaudhuri and Y. L. Chow of the University of Waterloo that the last equation and preceding sentence on page 180 of the above paper[1] do not agree with the tabulated data. The last two sentences should have read:

The signal-to-noise level was calculated by taking the log of the ratio of the square of the average of the absolute value of the signal over the time window of length $\gamma\Delta t$ divided by the variance of the noise σ^2. That is,

$$S/N\ (\text{dB}) = 10 \log \frac{\left(\sum_{i=0}^{\gamma-1} \frac{|R(i\Delta t)|}{\gamma}\right)^2}{\sigma^2}.$$

M. L. Van Blaricum is with the Electromagnetics Section, Effects Technology Inc., Santa Barbara, CA 93111.

R. Mittra is with the Electromagnetics Laboratory, Department of Electrical Engineering, University of Illinois, Urbana, IL 61801.

[1] M. L. Van Blaricum, and R. Mittra, *IEEE Trans. Antennas Propagat.*, vol. AP-26, pp. 174–182, Jan. 1978.

Correction to "High Frequency Scattering from an Open-Ended Semi-Infinite Cylinder"

C. A. CHUANG, MEMBER, IEEE, CHARLES S. LIANG, MEMBER, IEEE, AND SHUNG-WU LEE, SENIOR MEMBER, IEEE

In the above paper[1], there were six sign misprints.

1) Time factor should have read $\exp(-i\omega t)$.

2) In (1), x should have read $(-x)$.

3) In (4), $(1 + \cos\theta)$ in numerator should have read $(1 - \cos\theta)$.

C. A. Chuang is with Aeronutronic-Ford/WDL, Palo Alto, CA. He is now at 552 Solitaire Dr., Indialantic, FL 32903.

C. S. Liang is with the Fort Worth Division, General Dynamics, Fort Worth, TX 76101.

S. W. Lee is with the Department of Electrical Engineering, University of Illinois, Urbana, IL 61801.

[1] C. A. Chuang, C. S. Liang, and S. W. Lee, *IEEE Trans. Antenna Propagat.*, vol. AP-23, pp. 770–776, Nov. 1975.

0018-926X/80/1100-0949$00.75 © 1980 IEEE

4) In (7), $(\cos\theta + \cos\theta_0)$ should have read $(-1)(\cos\theta + \cos\theta_0)$.
5) In (11), $(\alpha - \alpha')$ should have read $(\alpha' - \alpha)$.
6) In (35), $(1 + i)$ should have read $(1 - i)$.

The above sign misprints do not affect any other equations or numerical results.

The authors wish to thank T. W. Johnson and D. L. Moffatt for bringing some of these errors to their attention.

Correction to "Element Pattern Bounds in Uniform Phased Arrays"

WASYL WASYLKIWSKYJ, SENIOR MEMBER, IEEE, AND WALTER K. KAHN, FELLOW, IEEE

The above paper[1] contains the following typographical errors. In the factor

$$1 + \frac{\cos\theta_1}{\cos\theta}$$

of (10) $\cos\theta$ and $\cos\theta_1$ should have been interchanged; in the denominators of (26) the dependence on ϕ should have been deleted.

More importantly, the discussion in connection with the illustrative example, Fig. 4, requires modification, since the element pattern given by (12) does not correspond to the structure shown in Fig. 4. The correct element pattern is

$$P^{(0)}(\theta) = \left(\frac{4}{\pi |1 + Z_0|^2}\right) \frac{\cos^2\theta}{\epsilon_r \cos^2\theta + \dfrac{\epsilon_r - 1}{\epsilon_r}[1 - (1 + \epsilon_r)\cos^2\theta]\sin^2(k_0 b\sqrt{\epsilon_r - \sin^2\theta})}.$$

As a consequence, (15) should have been replaced by

$$\hat{P}(\theta) = \frac{D}{\lambda}\cos\theta \cdot \begin{cases} 1: & 0 < |\sin\theta| < \lambda/D - 1, \\ \left[1 + \dfrac{\epsilon_r\cos^2\theta + A(\theta)}{\epsilon_r\cos^2\theta_1 + A(\theta_1)}\left(\dfrac{\cos\theta_1}{\cos\theta}\right)\right]^{-1}; & \lambda/D - 1 < |\sin\theta| < 1, \end{cases}$$

and (16) by

$$A(\theta) = \left(\frac{\epsilon_r - 1}{\epsilon_r}\right)[1 - (1 + \epsilon_r)\cos^2\theta] \cdot \sin^2\left(\chi\sqrt{\frac{\epsilon_r - \sin^2\theta}{\epsilon_r - 1}}\right).$$

These formulae lead to a slight modification of the curves shown in Figs. 5 and 6. The corrected Figs. 5 and 6 are shown. The only difference of consequence is that the limiting form $\epsilon_r \to \infty$ no longer obtains. Consequently (18) and the associated discussion should have been deleted.

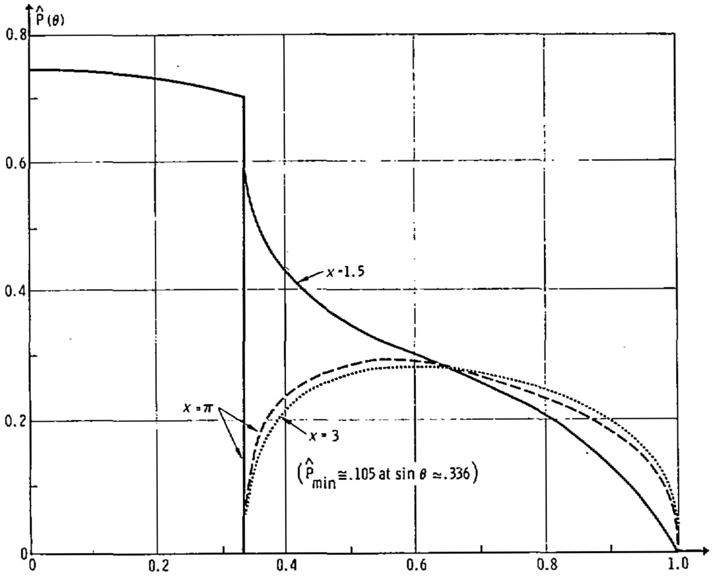

Fig. 5. Limiting patterns for several different arrays formed by varying the thickness of dielectric cover ($\epsilon_r = 2.56$, $\chi = 1.5, 3, \pi$).

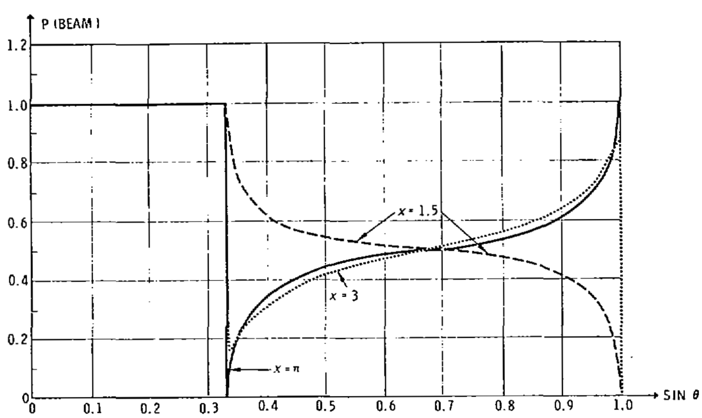

Fig. 6. Fraction of power radiated through main beam for several different arrays formed by varying the thickness of a dielectric cover ($\epsilon_r = 2.56$, $\chi = 1.5, 3, \pi$).

W. Wasylkiwskyj is with the Science and Technology Division, Institute for Defense Analysis, Arlington, VA 22202.

W. K. Kahn is with the Department of Electrical Engineering and Computer Science, School of Engineering and Applied Science, The George Washington University, Washington, DC 20052.

[1] W. Wasylkiwskyj and W. K. Kahn, *IEEE Trans. Antennas Propagat.*, vol. AP-25, pp. 597–604, Sept. 1977.

0018-926X/80/1100-0950$00.75 © 1980 IEEE