Corrections to *Array Signal Processing: Concepts and Techniques*

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Page	Correction
12	In the last table entry, the longitudinal and transverse speeds are reversed: longitudinal should be $5,770$ m/s and transverse $3,310$ m/s.
17	The end of the second sentence after the last displayed equation should read "... is given by $kr = \pi$ or $r = \pi/k = \lambda/2$."
41	The right side of the first equation should be multiplied by $(2\pi)^4$ and the right side of the second equation should be multiplied by $(2\pi)^3$.
47	In the example, each term in the last equation should be multiplied by π: $\chi_x = \frac{\pi l}{K_x}$, $\chi_y = \frac{\pi m}{K_y}$, $\chi_z = \frac{\pi n}{K_z}$, $\tau = \frac{\pi i}{\Omega}$.
49	The last displayed equation should be divided by 2π, making the constant term $\frac{A\omega_0^2}{4\pi^3 c^2}$.
60	The transform in the equation *after* (3.1) should not be divided by $(2\pi)^4$. The right side of the equation after this should not be divided by $(2\pi)^3$.
61	The right side of the boxed equation should be multiplied by $(2\pi)^3$.
73	The second line after the two-line equation should read: "space: $R_z(\vec{x}_1, \vec{x}_2; \tau)\ldots$".
74	The figure caption should read: "A perspective plot of the co-array of a circular aperture having radius $R = 1$ is shown as a function of radial distance χ in lag space." The sentence below the equation should read "... cone shaped: it is shown in Fig. 3.10."
87	The line after equation (3.15) should read "... bandlimited, $F(k, \omega)$ is zero...".
93	In the example, the second equation (the one for $\vec{k}_o$) should have a factor of two in the last entry of the vector: $2\pi(n_1 - n_2 + 2n_3)$.
95	The second sentence after the last equation that begins "For any M-sensor array..." and the sentence that follows should be replaced by the following passage. "For any M-sensor array, the maximum number of distinct, nonzero lags is $M(M-1)$. Lag symmetries of spatial correlation functions mean that this number is not as large as it may seem. In a linear array, for example, if a lag exists, so also must its negative. Thus, truly distinct lags number $M(M-1)$ reduced by a factor related to the dimension of the array's geometry (two for a linear array, four for two dimensions, and eight for a three-dimensions). Arrays that produce redundancies in their co-arrays must have fewer distinct lags, therefore sacrificing values at other lags."
106	Problem 3.5 should begin "Suppose a wavefield is propagating..."
113	The expression for an array's phase center in figure 4.1's caption has an error. It should read $\sum_m \vec{x}_m/M$. The same error occurs in the first paragraph. The first displayed equation can be considered correct, but it might be clearer to change the sum to an average.

Continued

Page	Correction
117	The example's third equation should have the signs of the js reversed and the $M/2$ in the leading exponent should be $M_{\frac{1}{2}}$. The equation should thus read $z(t) = e^{j\omega^o t}\exp\{jM_{\frac{1}{2}}\beta\}\sum_{m=0}^{M-1}\exp\{-jm\beta\}$. The derived answer (the next equation) is correct.
118	In equation (4.3), the quantity in the argument of $s(\cdot)$ should be $\left(t - \frac{r-(r_m - r_m^o)}{c}\right)$.
133	The unnumbered equation is missing the weighting: $\sum_{m=0}^{M-1} w_m Y_m(\omega)\exp\{-j\omega\Delta_m\}$.
164	The last line of the only paragraph should be "by a factor of I."
178	The pentultimate equation should be a sum over v, not u.
185	The first line after the first equation should read "Here, the phase shift γ equals $k_x^o d$ ...".
186	The equation in the middle of the page should read $$[\mathbf{C}]_{i,i} = 2\left|A_l^{(1)}A_l^{(2)}\right|\cos\left[\left(\gamma^{(1)} - \gamma^{(2)}\right)i - \varphi + \angle(A_l^{(1)}A_l^{(2)*})\right]$$
194	The matrix value of $\mathbf{R}_n^{-1}$ has an error on the last diagonal entry. $1+a^2$ should be 1.
197	In problem 4.25, the right side of the equation for Translation should read $F_R(p + n_0 - pm_0, q)$. Also in problem 4.25, the right side of the last equation for Modulation should read $e^{-j\omega_0 p}\sum_m g(m, p+qm)e^{-jq\omega_0 m}$. Problem 4.26 should begin "The interpolation beamformer shown on page 162 upsamples and lowpass filters *all* sensor inputs."
198	Problem 4.29, part (b), should read "Show that the spatial power spectrum equals $\mathscr{S}_s(\|\vec{k}\|/\|\vec{\alpha}^o\|)$."
263	Problem 5.26, part (a), should read "Show that the variances of the component terms depend on the slope q."
264	The footnote has an incorrect page number for Eq. 5.11; it should be {243}.
269	The second equation has too many differentials; the first $d\mathbf{y}$ should be deleted.
342	Problem 6.7, part (a), should end "... from the relationship $\widehat{\xi}_{\text{MMSE}} = \mathscr{E}[\xi\,\|\,\mathbf{y}]$."
352	The argument of the real part in the second equation should be $A\mathbf{s}'(\vec{\zeta}^o)\mathbf{K}_n^{-1}\mathbf{y}$.
363	"Minimum" is misspelled in the middle portion of the figure.
383	The first sentence of the first full paragraph should begin "The larger eigenvalues, which by the indexing convention have the smallest indices...". The sentence at the end of the sixth line after the last equation should begin "Peaks in output power appear..."
485	In the paragraph after the equation $C_{ij} = A_{ij} + B_{ij}$, the end of the second line should read "...if the number of columns of **A** equals the number of rows of **B**."