Errata
Speckle Phenomena in Optics

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- Page 7, line 7 from the bottom, "or the complex resultant" should read "of the complex resultant".
- Page 10, line 2 above Eq. (2-11), ϕ should read θ.
- Page 10, line 2 above Eq. (2-14), should read "where $||J||$ is the magnitude of the Jacobian determinant of the transformation ..."
- Page 15, Figure 2.4, the horizontal axis should be labeled A/σ.
- Page 51, Eq. 3-92, should read:

$$\begin{aligned}
\overline{I^2} &= \frac{1}{N}\,\overline{a^4} + 2\left(1-\frac{1}{N}\right)\left(\overline{a^2}\right)^2 \\
&+ 4\left(1-\frac{1}{N}\right)(N-2)\,\overline{a^2}\;(\overline{a})^2\,\mathbf{M}_\phi(1)\mathbf{M}_\phi(-1) \\
&+ 4\left(1-\frac{1}{N}\right)\overline{a^3}\,\overline{a}\,\mathbf{M}_\phi(1)\mathbf{M}_\phi(-1) \\
&+ \left(1-\frac{1}{N}\right)(N-2)\,\overline{a^2}\;(\overline{a})^2\,\mathbf{M}_\phi^2(-1)\mathbf{M}_\phi(2) \\
&+ \left(1-\frac{1}{N}\right)(N-2)\,\overline{a^2}\;(\overline{a})^2\,\mathbf{M}_\phi^2(1)\mathbf{M}_\phi(-2) \\
&+ \left(1-\frac{1}{N}\right)(N-2)(N-3)\,(\overline{a})^4\,\mathbf{M}_\phi^2(1)\mathbf{M}_\phi^2(-1) \\
&+ \left(1-\frac{1}{N}\right)\left(\overline{a^2}\right)^2\mathbf{M}_\phi(2)\mathbf{M}_\phi(-2).
\end{aligned}$$

- Page 53, Figure 3.16, caption should read "...(a) contrast C of partially developed speckle vs. $\sigma_\phi/2\pi$ for various values of N, and (b) C vs. N for various values of $\sigma_\phi/2\pi$."
- Page 63 line 2 above Eq. (4-20), change "Jacobian" to "magnitude of the Jacobian determinant". In Eq. (4-20), change $|J|$ to $||J||$. Line 2 below Eq. (4-20), change "Jacobian" to "Jacobian matrix". Line 1 above Eq.(4-21), change "The Jacobian then involves only a 4×4 matrix" to "The Jacobian matrix then is of size 4×4. Eq. (4-21), change $\|J|$ to $||J||$. Change footnote 2 to eliminate the second sentence.

- Page 64, Eq. (4-22), change $|J|$ to $||J||$.
- Page 67, line 2 above Eq. (4-37), "The magnitude of the Jacobian" should read "The magnitude of the Jacobian determinant"
- Page 68, first line below Fig. 4-2, should read "independent of θ_1..."
- Page 82, Eq. (4-73), in both lines, change $\int_{-\infty}^{\infty}$ to $\int\limits_{-\infty}^{\infty}\int$
- Page 86, line 1 before Eq. (4-81), change "in the two focal planes" to "in the two planes".
- Page 87, line line 8 below Eq. (4-86), change "narrow correlation function" to "narrow normalized correlation function".
- Page 88, line 1 below Fig. 4.13, change "correlation function" to "normalized correlation function".
- Page 89, line 2 below Eq. (4-89), change $\Gamma_{\mathbf{a}}$ to $\mu_{\mathbf{a}}$.
- Page 96, caption for figure 4.17 should read: "Normalized autocorrelation functions for (a) the surface height fluctuations , and (b) the field just above the rough surface."
- Page 100, top line, "...circular symmetry of separable symmetry..." should read "...circular symmetry or separable symmetry...".
- Page 101, Figure 4.21, the values of σ_h/λ are a factor of 2 too large. In (a), the tick marks should be labeled 0.1, 0.2, 0.3, 0.4, 0.5. In part (b), the curves should be labeled 0.05, 0.1, 0.15, 0.2 and 0.25.
- Page 102, line 12 above 4.5.6, change "Hence the behavior seen in part (b)..." to " This explains the behavior seen in part (b)...".
- Page 110, Caption for Figure 4.24, change "...in the gray box..." to "...in the box..."
- Page 123, line 4 above footnote, change "...results in a figure:" to "...results in Figure 4.29." also, last line before footnote, change "coherence area" to "correlation area".
- Page 125, line 2 above Eq. (4-188), change "Jacobian" to "magnitude of the Jacobian determinant". Also, in Eq. (4-188), change $\cos\phi$ to $\cos^2\phi$ and change $\sin\phi$ to $\sin^2\phi$.
- Page 150, Eq. 5-18, the 8 in the numerator should be 32.
- Pages 151-153, Figs. 5.5, 5.6, 5.7, on horizontal axes, change ν to v.
- Page 159, Eq. (5-45), $\frac{c}{4\sigma_h}$ should read $\frac{c}{2\sigma_h}$. Also, in Eq. (5-46), replace q_z by Δq_z in two places.
- Page 161, Figure 5.11 caption, at the end replace "$\Delta\vec{q}$" by "(c) $\Delta\vec{q}$"
- Pages 175, 176, Eqs. (5-103), (5-105), (5-106), $M_h(\Delta q_z)$ should read $\mathbf{M}_h(\Delta q_z)$.

  Page 181, Eq. (5-122), remove the square root sign in the bottom line.
- Page 203, first word on page, change "apertures" to "subapertures".

- Page 219, line 1 after Eq. (6-48), change"diffuse" to "diffuser".
- Page 222, line 4 from bottom, "projector elements" should read "projector resolution elements".
- Page 223, line 7 from top, change "orthogonal" to "deterministically orthogonal".
- Page 224, line 5 below Eq. (6-71), change "Each correlation time..." to "For each correlation time...".
- Page 275, second to last line of first paragraph, eliminate duplicate reference [41].
- Page 279, 5th line in first paragraph, change "96" to "128".
- Page 285, line 4 above Section 8.1.5, change "As the the displacement..." to "As the displacement...".
- Page 288, Eq. (8-21), between first and second equal signs, should read $|\mathbf{A}_u(x,y)+\mathbf{A}_l(x,y)|^2$.
- Page 290, line 3, change (π,π) to $(-\pi,\pi)$.
- Page 294, line 2 above Eq. (8-35), $\mathbf{A}_l(x,y)$ should read $\mathbf{A}_u(x,y)$ and $\mathbf{A}_u(x,y)$ should read $\mathbf{A}_l(x,y)$.
- Page 298, line 3 from bottom, should read "...introducing a component of phase change that depends on the phase change introduced by the mirror, in addition to the phase change $\Delta\phi$ caused by the deformation...".
- Page 303, first line below Eq. (8-59), change "Equation (8-60)..." to "Equation (8-59)...".
- Page 321, line 6 below Eq. (9-19), $|\mathcal{H}(\vec{\nu})|^2$ should read $|\mathcal{H}_S(\vec{\nu})|^2$. Also, line 3 above footnote, same change needed.
- Page 322, first line below figure caption, change $|\mathcal{H}(\vec{\nu})|^2$ to $|\mathcal{H}_S(\vec{\nu})|^2$
- Page 342, item 4 leading to Eq. (B-5), $n=p, m\neq q\neq n$ should read $n=p, m=q, n\neq m$.
- Page 342, Eq. (B-6), second line should read:

$$\left(1-\frac{1}{N}\right)(N-2)\overline{a^2}(\overline{a})^2\mathbf{M}_\phi(-1)\mathbf{M}_\phi(-1)\mathbf{M}_\phi(2).$$

- Page 342, Eq. (B-7), righthand side, should read:

$$\left(1-\frac{1}{N}\right)\left(\overline{a^2}\right)^2$$

- Page 344, Eq. B-17, 5th line should read:

$$\left(1-\frac{1}{N}\right)(N-2)(N-3)(\overline{a})^4\mathbf{M}_\phi^2(1)\mathbf{M}_\phi^2(-1)$$

and the 1st line should read

$$\overline{I^2}=\frac{1}{N}\overline{a^4}+2\left(1-\frac{1}{N}\right)(\overline{a^2})^2.$$

- Page 352, line 3 from bottom, $M_h(\omega)$ should read $\mathbf{M}_h(\omega)$.
- Page 353, Eq. (D-9), replace $<$ by $<<$.
- Page 366, footnote, last sentence should read "The statistics of the integrated intensity W are the statistics of the integral..."