Corrections to Biomedical Optics: Principles and Imaging

For 1st Print, 2007

4/9/2007

Pg. 202, 2nd paragraph below Eq. (9.83):
"… measure the second term" should be "… measure the third term"

Pg. 202, Eq. (10.6):
Change arctan to $\arctan_2$.

After "where $0 \le \theta_o < \pi$.", add the following sentence:
"Here, $\arctan_2$ denotes four-quadrant inverse tangent, yielding an angle dependent on the quadrant of $\left(E_{x0}^2 - E_{y0}^2, \quad \cos \Delta\phi\right)$."

Pg. 202, below Eq. (10.7):
Replace "major and minor" with "semimajor and semiminor".
Replace "right- and left-handed" with "left- and right-handed".

Pg. 224, above Eq. (10.24):
Replace $E_{0x} = E_{0y}$ with $E_{x0} = E_{y0}$.

Pg. 225, Eq. (10.27):
Correct signs to

$$\mathbf{M}_r(\theta) = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos 2\theta & -\sin 2\theta & 0 \\ 0 & \sin 2\theta & \cos 2\theta & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix}$$

Pg. 226, Eq. (10.32):
Correct signs to

$$\mathbf{M}_\phi = \begin{pmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & \cos\phi & \sin\phi \\ 0 & 0 & -\sin\phi & \cos\phi \end{pmatrix}.$$

Pg. 226, Eq. (10.33):
Correct signs to
$\mathbf{M}(\theta) = \mathbf{M}_r(\theta)\mathbf{M}(0)\mathbf{M}_r(-\theta)$

Pg. 226, above Eq. (10.34):
Change from $\phi = \pi/2$ to $\phi = -\pi/2$.

Pg. 228, below Eq. (10.42):
Change from $\phi = -\pi/2$ to $\phi = \pi/2$.

Pg. 230, Eq. (10.55):
Correct signs to

$$\mathbf{J}_r(\theta) = \begin{pmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{pmatrix}$$

Pg. 231, Eq. (10.57):
Correct signs to
$\mathbf{J}_p(\theta) = \mathbf{J}_r(\theta)\mathbf{J}_p(0)\mathbf{J}_r(-\theta)$

Pg. 231, Eq. (10.60):
Correct signs to
$\mathbf{J}_\phi(\theta) = \mathbf{J}_r(\theta)\mathbf{J}_\phi(0)\mathbf{J}_r(-\theta)$

Pg. 235, Eq. (10.96):
Correct signs to

$$\mathbf{U} = \frac{1}{\sqrt{2}}\begin{pmatrix} 1 & 0 & 0 & 1 \\ 1 & 0 & 0 & -1 \\ 0 & 1 & 1 & 0 \\ 0 & -i & i & 0 \end{pmatrix}$$

Pg. 257, Eq. (11.10):
Correct time dependence to
$U(\vec{r},t) = U_{DC}(\vec{r}) + U_{AC}(\vec{r})\exp(-i\omega t)$.

Below the equation, change $U_{AC}(\vec{r},t)$ to $U_{AC}(\vec{r})$.

Pg. 260, Example 11.1:
Replace "figure(2)" with "figure(2) % optional" in the MATLAB file.

5/15/2007

Pg. 60, Problem 3.2:
Append the following sentences: "Note that the formula depends on the choice of the local moving coordinate system. The Monte Carlo simulation, however, leads to the same result."

Pg. 86, paragraph below Eq. (5.13):
Replace
"For example, distant scattering of an originally collimated beam can result in local divergence; conversely, distant focusing can result in local convergence"
with

"It can be seen later that this contribution still exists when the absorption and scattering coefficients are set to zero in the radiative transfer equation."

Pg. 98, Eq. 5.81, exponent:
Replace $4Dct$ with $4Dc(t-t')$.

Pg. 128, third line of the bottom paragraph:
Swap $0.3l_t'$ with $0.5l_t'$.

Pg. 171, last paragraph, third line:
Delete "Consequently, " then capitalize the following "a".

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1/30/2008
Pg. 165, Fig. 8.10(a):
Enlarge the lower left arrow to the same size as the other ones.

Pg. 167, Below Eq. 8.34:
Indent the paragraph.

Pg. 166, Paragraph above Eq. 8.26, 2nd to last line:
Replace "lens" with "thin lens".

Pg. 14, Problem 1.7:
Replace
$s = 100 \ln(x_1)$
with
$s = -100 \ln(x_1)$

4/2/2008
Pg. 228, Eq. 10.40:
Correct to

$$\mathbf{S}_H^o = \begin{pmatrix} 1 \\ 1 \\ 0 \\ 0 \end{pmatrix}, \mathbf{S}_V^o = \begin{pmatrix} 1 \\ -1 \\ 0 \\ 0 \end{pmatrix}, \mathbf{S}_{+\pi/4}^o = \begin{pmatrix} 1 \\ 0 \\ 0 \\ -1 \end{pmatrix}, \mathbf{S}_R^o = \begin{pmatrix} 1 \\ 0 \\ 1 \\ 0 \end{pmatrix}.$$

4/7/2008
Pg. 253, Fig. 11.3:
Remove "Mixer" between the two function generators and the two black dots.

Pg. 255, Fig. 11.5:
Darken the lowest line next to "Computer".

Pg. 273, above Eq. 11.81:
Replace
"we expand U_M to the first order by a Taylor series in matrix form"
to
"we equate the first-order Taylor series in matrix form of U_C to U_M "

7/10/2008
Pg. 117, problem 5.19 part b:
Replace “azimuthally symmetric around s”
With
“azimuthally symmetric around s'”

Pg. 95, below Eq. 5.69:
Replace “azimuthally symmetric around s”
With
“azimuthally symmetric around s'”

6/24/2009
Pg. 238, Fig. 10.2
Add an arrow to the reference mirror showing the scanning motion.

2/16/2010
Pg. 184, two lines above Eq. 9.10:
Insert “the envelope of” in front of “the autocorrelation function”

Pg. 317, Eq. 12.105:
Replace the **two** 0’s in the lower integration limits to –∞.

Pg. 317, Eq. 12.106:
Replace the **three** 0’s in the lower integration or evaluation limits to –∞.

Pg. 317, Eq. 12.107:
Replace the **six** 0’s in the lower integration or evaluation limits to –∞.

Pg. 316, last paragraph above Appendix 12B:
Note that the above derivation is under the assumption of adiabatic propagation of sound.

Pg. 288, two lines below Eq. 12.18, before “A more detailed derivation”:
Insert “Here, we assume that $C_p \approx C_V$, which holds well in soft tissue.”

Pg. 193, last line above Example 9.3. After "Figure. 9.5":
Append ", which is valid only for $\Delta\lambda \ll \lambda_0$, strictly speaking."

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10/6/2010
Pg. 184, Eq. (9.10):
Change $E(t+\tau)$ to $E^*(t+\tau)$.

Pg. 185, 2nd line:
Change $2n\Delta l \le l_c$ to $2n[(\Delta l)_{\max} - (\Delta l)_{\min}] \le l_c$.

Pg. 212, lines 2 and 3:
Change $l_c/2$ to $l_c/4$.