

Errata Sheet for LASER BEAM SCINTILLATION WITH APPLICATIONS

by

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- p. 13: Eq. (13); the term " $|\mathbf{s} - \mathbf{r}|$ " should read " $|\mathbf{s} - \mathbf{r}|^2$ ".
- p. 76: Insert plus sign "+" between terms in second line of Eq. (11).
- p. 77: Lines 3 & 4 from bottom of middle paragraph: "unity" subscript missing in equation. Should read " $(\sigma_A^2)_{\text{refrac}} \sim 1/\sigma_1^{4/5}$ " in line 4 from bottom. Should read " $\sigma_A^2 \sim 1 + 1/\sigma_1^{4/5}$ " in line 3 from bottom.
- p. 91: The quantity " $\beta + 1$ " should only appear once in the argument of the first ${}_1F_2$ function in Eq. (46) the quantity " $\alpha + 1$ " should only appear once in the argument of the second ${}_1F_2$ function in (46).
- p. 140: The subscript "7/6" in denominator of Eq. (41) should read "5/6".
- p. 167: The second line of Eq. (2): " $\frac{16}{\pi D^2}$ " should read " $\frac{16B_I(0)}{\pi D^2}$ ".
Line 3 from bottom: "...to refer to Eq. (2)" should read "...to refer to Eq. (2), scaled by $B_I(0)$ ".
- p. 168: Line 2 after Eq. (4): "...is proportional to..." should read "... is equal to..."
- p. 177: Line 1 after Eq. (28): "... is given by (29)" should read "...is given by (24)".
- p. 212: Line 1 after Eq. (29): "... recall that $\langle \Delta P_s^2 \rangle = A \langle P_s \rangle^2$, ..." should read "... recall that $\langle \Delta P_s^2 \rangle = \sigma_I^2(D) \langle P_s \rangle^2$, ..."
Line 1 after Eq. (29): "... where $A \leq 1$ is the aperture averaging coefficient." should read "... where $\sigma_I^2(D) = A \sigma_I^2(0)$ and A is the aperture averaging coefficient."
Replace " A " in Eq. (30) with " $\sigma_I^2(D)$ ".
Lines 4, 9, 10, 12, & 13 after Eq. (30): replace " A " with " $\sigma_I^2(D)$ ".
Line 12 after Eq. (30): remove "(small collecting lens)".
- p. 213: Fig. 7.4: replace " A " with " $\sigma_I^2(D)$ " in figure and in caption.
Remove the second sentence in the caption, i.e., "The parameter A ... lens."
- p. 217: Eq. (45): " I_{N2} " in last term should read " i_{N2} ".

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Errata: p. 2

p. 224: Eq. (72): replace “ A ” with “ $\sigma_I^2(D)$ ”.

Line 1 after Eq. (72): replace entire line with “where we have used”.

Eq. (73): remove “ $A =$ ”.

Line 4 below Eq. (73): replace “ $A = 0$ ” with “ $\sigma_I^2(D) = 0$ ”.

Line 2 of last paragraph: replace “...the aperture averaging factor ...” with “... the flux variance ...”

Line 3 of last paragraph: replace “... that aperture averaging occurs, then ...” with “... the flux variance ...”

Lines 2 and 3 of last paragraph: replace “ A ” with “ $\sigma_I^2(D)$ ”.

p. 225: Line 2: replace “ A ” with “ $\sigma_I^2(D)$ ”

Fig. 7.8: replace “ A ” with “ $\sigma_I^2(D)$ ” in figure and in caption

Remove the second sentence in the caption, i.e., “The parameter A ... lens.”

p. 237: the second equation in (94): It should read:

$$\frac{1}{\beta} = \sigma_y^2 = \exp \left[\frac{0.51 \beta_0^2 (1 + 0.69 \beta_0^{12/5})^{-5/6}}{1 + 0.90 d^2 + 0.62 d^2 \beta_0^{12/5}} \right] - 1$$

p. 247: The correction above on p. 91 applies also to Eq. (17)

p. 252: Line 1 after Eq. (40): “... is given by (37)” should read “... is given by (34)”

p. 344: Second equation in (23): “ Λ_G ” should read “ Λ_2 ”

p. 352: Eq. (40): “ r ” in the denominator should read “ r_0 ”

p. 361: Line 1 below Eq. (60): “... roughness ...” should read “... phase ...”