August 16, 2007 Errata #16 for Phase-Lock Basics

Number of the printing is given by last number in "10 9 8 7 ..." on bottom of copyright page.
Spaces are not included in line counts below.

ERRORS IN FIRST THROUGH FIFTH PRINTINGS

pages xxx and 460, last line in each: 212-850-6753 becomes 201-748-6753

p. 8, first two lines: switch "sin" and "cos". The first line will then end in "of sin kt as", for example.

p. 44, first two lines of para. 3: switch subscripts (1 and 2) on two Q's.
The first Q will then have subscript 2.

p. 48, Fig. 3.20: switch subscripts on omegas in two expressions for tau,
giving $\tau_1 = 1/\omega_p$ and $\tau_2 = 1/\omega_z$.

p. 59: to right of Eq. (3.59), add "$= -G_a$".
Last word in line below, "value" $\Rightarrow$ "magnitude".
Three lines below, "F_d and G_a can intersect" $\Rightarrow$ "$|G_a| = 1$ can occur".
Fourth line from bottom, $G_a \Rightarrow |Z_{21}|$.
Second line from bottom, $R_p \Rightarrow R_2$.

p. 73, 2 lines below Eq. (4.15a), $\omega_n \Rightarrow \omega_z$.

p. 94, first word in second line in second full paragraph: change "singularity" to "zero".

p. 125, Eq. (6.48): $n_2 d_3 \Rightarrow -n_2 d_3$.

p. 132, line 13: "y = c*   +d*u;" $\Rightarrow$ "y = c*x'+d*u;"

p. 156, second line in both figure captions: put "(dB) " before = and put " dB " after "20".

p. 166, problem 7.6(c), first 2 lines, replace "peak" with "magnitude of the", 2 places.

p. 178, Eq. (8.28) and same equation in Table 8.A.1 on p. 199: 1.19 becomes 1.2.

p. 182, Eq. (8.40): delete t following the initial v_{out}.

p. 187, first line of paragraph 2: B changes to A.

p. 191, Fig. 8.18, middle of top border: add "$\Omega =$ " before "Ω_{PI}".

p. 202, fourth line from end: "phase" becomes "frequency" and "rads" becomes "rad/sec."

p. 204, last symbols on page: add "rad/sec" after "4.5".

p. 213, line 6: "`pi`" $\Rightarrow$ "`0.5`".

p. 228, Fig. 9.7(b): $v(U)$ becomes $v(C)$.

p. 287: Eq. (10.M.2), between the two fractions, $+ \Rightarrow =$;
      line below Eq. (10.M.3), `Ord3spcl` $\Rightarrow$ `Open2cls` .

p. 290, line 16: "radians second" $\Rightarrow$ "radians/second".

p. 297, footnote 1, after δf, "is" becomes "if."

p. 298, Eq. (11.6b): $\dfrac{1}{2\pi} \Rightarrow \dfrac{\text{cycle}}{2\pi}$.

p. 311, end of line 2: "`D9<-0.9999),`" $\Rightarrow$ "`D9>-0.9999),`".

p. 324, middle, line starting with -163: $163 \Rightarrow 243$; $10^{-16} \Rightarrow 10^{-24}$; 7071 Hz $\Rightarrow$ 707 kHz.

p. 332, 2 lines above Eq. (12.17): Replace "Then" with "If $T << 1/\omega_m$".

p. 344, 9 lines below Eq. (13.21), (13.20) $\Rightarrow$ (13.21).

p. 351, 3 lines from bottom: (13.24) $\Rightarrow$ (13.4).

p. 361, Fig. 14.2, lower figure: vertical axis label is squared (i.e., $|H|^2$) and "Magnitude" at start of legend becomes "Magnitude squared".

p. 364, 2 lines above paragraph 14.3.4, (14.19) $\Rightarrow$ (14.18).

p. 365, Eq. (14.29): $\gamma \Rightarrow (\gamma \sec)$.

p. 379, Eq. (15.7): in denominator, $\omega_m \Rightarrow j\omega_m$.

p. 403, end of 7th line from bottom: "where an" $\Rightarrow$ "where a coherent"

p. 411, Eq. (17.9): $\varphi_o \Rightarrow \phi_o$

p. 416, Eq. (17.35) and three lines below: $\sigma_{\varphi nm}^2 \Rightarrow \sigma_{\varphi n}^2$.

p. 431, Eq. (18.12): after the summation, insert $4/k^2$, giving

$$\sigma_{\varphi n}^2 = \left[\frac{\pi^2}{3} + 4 \sum_{k=1}^{\infty} \frac{(-1)^k}{k^2} \frac{I_k(\rho_{L0})}{I_0(\rho_{L0})} \right] \text{rad}^2 . \qquad (18.12)$$

p. 442, 3rd line below title: σ_n should be squared.

p. 450: just above Example 19.1, 90% $\Rightarrow$ 99%; 2 lines from the bottom, -3 dB $\Rightarrow$ -1.5 dB.

p. 452, Fig. 19.3: (but OK in first two printings): Area to left of vertical line at V_T should be shaded.

p. 472, answer 8.3(b): 5.06 $\Rightarrow$ 2.91.

p. 473, answer 16.2: delete "2.35 $\Rightarrow$"; insert before first semicolon, "approximate, 3.94 dB accurate"

ERRORS IN FIRST THROUGH THIRD PRINTINGS

p. 67, problem 3.2(b): $K_{vp} \Rightarrow K_p$.

p. 288, line 17: "half" $\Rightarrow$ "the square root of";

p. 288, line 19 "(zero)/(2*pole)) becomes "(zero/pole)^0.5".

p. 455, bottom equation: delete "$\dot{\omega}_{in} -$", leaving $|\dot{\omega}_c|$.

p. 474, in answer to 18.3, after "(" insert "11.58 rad/sec".

ERRORS IN FIRST AND SECOND PRINTING

p. 24, Fig. 2.4: Add "+" and "-" to summer as in Fig. 25.

p. 50, Fig. 3.23 legend (below the figure): Last word, "lag", becomes "lag-lead."

p. 57: Delete second line on page and last word ("following") of first line.

p. 62, 4 lines from end of Section 3.3.2.14: $I_b/C_2 \Rightarrow I_b/C_1$.

p. 67, problem 3.2(b): $K_v \Rightarrow K_p$.

p. 93, Eq. (5.13a): Put a minus before the right side.

p. 108, 8 lines from bottom, last word: "top" $\Rightarrow$ "bottom".

p. 110, 4 lines above Eq. (6.13): "4 in 4.6" becomes "2 in 4.6"

p. 132, line 17: "% x, y and u have a row..." or "`% x', y and u have a row...`" becomes "`% x', y and u have a column...`"

p. 141, Eq. (7.8) and (7.9): $\omega \Rightarrow \omega_m$, 3 places.

p. 149, line 1: "Fig. 6.1" becomes "Fig. 6.2"

p. 178, Eq. (8.28): "-1.19" becomes "+1.19".

p. 181, Eqs. (8.32a) & (8.35): Leading $\Delta \Rightarrow \delta$.

p. 199, Table 8.A.1, Pull-in, Sine, second equation: The first radical should extend all the way to the right, covering $-1.092\zeta^2$; also change 1.19 to 1.2:

$$3\zeta K \sqrt{\sqrt{0.423 + 1.2\zeta^4} - 1.092\zeta^2}$$

p. 201, 2nd line from bottom: "$\alpha = 1$" becomes "$\alpha = 0$".

p. 239, 2nd line from bottom: $f_c \Rightarrow f_{IN}$, 2 places.

p. 242, 248, and 249: divide symbols look like + in Fig. 10.2 ($\div$N), Fig. 10.9 ($\div$M), Fig.10.10 (P$\div$, 2 places).

p. 251, line 4: "one bit" becomes "two bits".

p. 262, Fig. 10.25, on far right: $F_M \Rightarrow F_N$..

p. 264 and p. 265: $\omega_{p2} \Rightarrow \omega_p$, 5 places. These are in Eqs. (10.A.3). (10.A.5), and (10.A.6) and Fig. 10.A.2 and line 16 on page 265.

p. 268, Eq. (10.A.24): add subscript "2" to zeta in numerator.

p. 288, line 17: "half" becomes "`the square root of`".
p. 288, line 19: "`(zero)/(2*pole))`" becomes "`(zero/pole)^0.5`".

p. 303, 304 (Sec. 11.5): cycle units are missing, "T_x" $\Rightarrow$ "T_x /c" eight places, every occurrence except Eq. (11.18).

p. 311, Fig. 11.S.2: column 3 should have "dB" units.

p. 321: Title "Example 2.5" $\Rightarrow$ "Example 12.5".

p. 334: Title "Fig. 12.P1" $\Rightarrow$ "Fig. P12.1".

p. 339, Fig. 13.3: The upper part of the figure is a and the lower part is b.

p. 350, 351: remove "rad/sec" six places.

p. 351, middle: (13.23) $\Rightarrow$ (13.25).

p. 354: Titles "Fig. P1" and "Fig. P2" become "Fig. P13.1" and Fig. P13.2" respectively.

p. 368, Eqs. (14.38) to (14.40): $S_{out} \Rightarrow S_{\varphi,out}$.

p. 378, Fig. 15.3: $S_{\varphi n}$ should not extend to the right past $W/2$.

p. 379, Eq. (15.3): df becomes df_m.

p. 384, below Eq. (15.27), (15.24) $\Rightarrow$ (15.27).

p. 386, lowest drawing: series capacitor should be a resistor.

p. 388, 2nd line from bottom: insert "additive" before "noise".

p. 411, 413, Eqs. (17.11), (17.12), (17.18): in "exp( )", a minus precedes "1/2" in the argument.

p. 414, Eq. (17.25): subscript "in" $\Rightarrow$ "m".

p. 416, 3 lines below Eq. (17.35): (17.36) $\Rightarrow$ (17.35).

p. 422, below Eq. (17.50): delete "peak" in "peak signal power".

p. 436, Eq. (18.18): $e\rho_{L0} \Rightarrow \exp(\rho_{L0})$.
p. 436, Eq. (18.19): $e^2\rho_{L0} \Rightarrow \exp(2\rho_{L0})$.

p. 439, Eq. (18.22), after first two equal signs, replace "1" by "c" or "cycle" (2 places).

p. 444: the script "erdis" should have "`clear z y`" inserted as the first line of code (not after the title as shown in the second printing). This should also be inserted in downloaded scripts that have not been updated.

p. 452, Example 19.2: 0.51 $\Rightarrow$ 0.71, 0.255 $\Rightarrow$ 0.355 two places, 47.7 Hz $\Rightarrow$ 92.4 Hz.

p. 453, Eq. (19.12) and p. 455, bottom equation: delete "$\dot{\omega}_{in} -$", leaving $|\dot{\omega}_c|$.

p. 471, in problem 3.3 answer: 0.909 $\Rightarrow$ 0.0909.

p. 473, answers to 11.1: in (c), 5.32 $\Rightarrow$ 5.37; in (d), 2.83 $\Rightarrow$ 2.89
p. 473, answer to 12.2(c): 0.00127 $\Rightarrow$ 0.00101
p. 473, answer to 13.1: (a),(b),(c),and (d) become (b), (c), (d), and (e) respectively.
p. 473, answer to 15.1(c): "7.5.4" $\Rightarrow$"7.6.4".
p. 473, answer to 16.1(d): 3869 $\Rightarrow$ 3876.

p. 474. In answer to 17.4: subscript in numerator of first fraction should be φnm (add the "m"). In answer to 18.3, after "(", insert "11.58 rad/sec".

ERRORS IN FIRST PRINTING ONLY

p. 288, line 19: "`r 0= ...`" becomes "`r0 = ...`" [no space between r and 0]

p. 270: replace the plus sign between the two terms by a minus sign in all 4 equations; change the denominator in the second term from "r - 1" to "r - 3" in Equations (10.A.32b) and (10.A.33b).

SOFTWARE CHANGES

SSramp.m, approximately 4/99
Comments on lines 1 and 3 erroneously referred to "step." Change references to "ramp."

Open2c4.m, approximately 5/00
definition of "r" corrected in comment and displayed line (old lines 13 and 14).
"G" defined in added line 4.

Open2cls.m, approximately 5/00
definition of "r" corrected in comment (line 17) and displayed line (line 19).

NLPhP, NLPhx, NLsaw, NLPhN, approximately 8/04
The phase value displayed for shift due to sampling was high by 2*pi. In each case, "SampPhShift = .5*WL*OutInc/SmpPerOut;" now has replaced "SampPhShift = pi*WL*OutInc/SmpPerOut;". This was an information display and does not directly affect results.