

Additions and Corrections
to Emended Edition of
Feynman and Hibbs

<http://www.oberlin.edu/physics/dstyler/FeynmanHibbs/EmendedEditionErrors.pdf>

Dan Styer, Professor of Physics, Oberlin College, Oberlin, Ohio 44074, USA
Dan.Styer@oberlin.edu

copyright © 29 May 2018 by Daniel F. Styer

The following errors or omissions appear in my emended edition of *Quantum Mechanics and Path Integrals* by Richard P. Feynman and Albert R. Hibbs (Dover Publications, Mineola, New York, 2005). Please send additions to the address above.

Thanks to James Donley, Charles Darwin Hepburn, Jim Marvel, J. Ricardo G. Mendonça, Mark Weitzman, and especially Jean Vaillancourt for uncovering errors.

Page 10, two lines above figure 1-5: “determintation” should be “determination”.

Page 22, 13 lines from bottom: “amplitude functions” should be “amplitude function”.

Page 35, problem 2-6: Be warned that this is a difficult problem now known as the “Feynman Checkerboard” or the “Relativistic Chessboard Model”. See

http://en.wikipedia.org/wiki/Feynman_checkerboard.

Page 55, end of paragraph: “... the probability distribution at the time t' after passing through the slit” should be “... the probability distribution at the time t' after passing through the slit is like that shown in Fig. 3-6.”.

Page 69, line 6: “... depends what value” should be “... depends on what value”.

Page 77, one line below equation (4.5): “... from 0 to of 1 radian” should be “... from 0 to 1 radian”.

Page 98, equation (5.5): “ dy ” should be “ dx ”.

Page 104, one line below equation (5.17): The reference to equation A.7 should be to A.10.

Page 108, equation (5.29): The left-hand side is missing its differential dx . It should be

$$\int_{-\infty}^{+\infty} K_{\text{exp}}(\check{y}, x) K_{\text{exp}}^*(y, x) dx.$$

Page 110, line 14: "...sates" should be "...states".

Page 121, two lines above equation (6.8): "... the variable x " should be "... the variable s ".

Page 124, one line below equation (6.12): "... in our convention we are using" should be "... in the convention we are using".

Page 128, five lines below equation (6.25): " $\psi(c)$ " should be " $\phi(c)$ ".

Page 137, four lines below equation (6.47): "contribution" should be "contribute".

Page 138, third line of problem 6-8: "nuclear change" should be "nuclear charge".

Page 139, one line below equation (6.56): "nuclear change" should be "nuclear charge".

Page 144, one line above equation (6.67): The reference to equation 6.10 should be to 6.17.

Page 187, last line of problem 7-12: " $-(i/\hbar)(Hg - gH)$ " should be " $-(i/\hbar)(gH - Hg)$ ".

Page 208, first line: "making us of" should be "making use of".

Page 213, four lines above bottom: "anything the happens" should be "anything that happens".

Page 217, two lines below equation (8.84): "normal coordiantes" should be "normal coordinates".

Page 227, first line: "sheer strain" should be "shear strain".

Page 228, equation (8.129): at five places, " U_1 " should be " U_0 ".

Page 231, equation (8.133): the + sign should be a - sign.

Page 233, equation (8.137): " $\phi_m(x_b)$ " should be " $\phi_m^*(x_b)$ ".

Page 238, one line above equation (9.12): "... plain wave" should be "... plane wave".

Page 240, equation (9.25): " $\mathbf{A}(\mathbf{x}(t), t)$ " should be " $\mathbf{A}(\mathbf{x}_i(t), t)$ ".

Page 242, line 2: " S_2 " should be " S_3 ".

Page 252, two lines below equation (9.67): "... in Sec. 5-1" should be "... at Eq. (6.15)".

Page 256, first paragraph of section 9-6: "Lamb and Retherford found in 1946...": see Willis E. Lamb, Jr. and Robert C. Retherford, "Fine Structure of the Hydrogen Atom by a Microwave Method," *Physical Review*, **72** (1 August 1947) 241-243.

Page 256, second paragraph of section 9-6: The "work of Bethe and Weisskopf in 1947" was published as H.A. Bethe, "The Electromagnetic Shift of Energy Levels," *Physical Review*, **72** (15 August 1947) 339-341. While not a coauthor, Weisskopf's contributions are acknowledged within the text.

Page 258, first full paragraph: The “method worked out by Feynman” was published as Richard P. Feynman, “Relativistic Cut-Off for Quantum Electrodynamics,” *Physical Review*, **74** (15 November 1948) 1430–1438.

Page 262, three lines below equation (9.98): “resent” should be “present”.

Page 275, first line: “Eq. (10.37)” should be “Eq. (10.36)”.

Page 286, one line below equation (10.71): “ kT ” should be “ $\hbar\omega$ ”.

Page 319, footnote 8: “Excitation Theory” should be “Perturbation Theory”.

Page 334, second line: “distributional” should be “distribution”.

Page 335, equation (12.52): “ $d\tau$ ” should be “ dt ”.

Page 339, second line: The reference to equation 12.34 should be to 12.35.

Page 354, equations (12.124) AND (12.126):

“ $e^{-n\hbar\omega_0/kT}/(1 - e^{-\hbar\omega_0/kT})$ ” should be “ $e^{-n\hbar\omega_0/kT}(1 - e^{-\hbar\omega_0/kT})$ ”.