Errata for
The Feynman Lectures on Physics Volume III
Definitive Edition (third printing)

The errors in this list appear in the 3rd printing of *The Feynman Lectures on Physics: Definitive Edition* (2005) and earlier printings and editions; these errors have been corrected in the 4th printing of the *Definitive Edition* (2006).

Errors are listed in the order of their appearance in the book. Each listing consists of the errant text followed by a brief description of the error, followed by corrected text.

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III:x, par 5

The errata corrected in this edition come from three sources: about 80 per cent are from Michael Gottlieb; most of the rest are from a long list by an anonymous reader, submitted to Feynman in the early 1970s via the publisher; and the remainder are from scattered short lists provided to Feynman or us by various readers.

This is not true of the second printing. A footnote should be added.

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†Based on feedback from interested readers, approximately 340 new errata have been reported in the Lectures since the first printing of the Definitive Edition. Of these errata, approximately 80 have been corrected in the second printing, with more corrections to follow in future printings. A complete list of errata and the names of the contributors are posted at *www.feynmanlectures.info*.

III:10-3, par I

From our solution we see that if a proton and a hydrogen ion are put anywhere near together, the electron will not stay on one of the protons but will flip back and forth between the protons.

Incorrect statement. There is no electron in a hydrogen ion!

From our solution we see that if a proton and a hydrogen atom are put anywhere near together, the electron will not stay on one of the protons but will flip back and forth between the protons.

III:10-3, Fig 10-3 caption

(E_h = 13.6 eV.)

Wrong convention: (‘eV’ vs’ ev’). [Note: this error was introduced in the Definitive Edition.]

(E_H = 13.6 ev.)

III:10-4, par I

… is given in units of 1 A(10^{-8} cm),

The ring on top of the ‘Å’ (for Angstrom) is missing.

… is given in units of 1 Å(10^{-8} cm),

III:10-4, par 3

The net result is a lower energy than a hydrogen atom.

Incomplete statement.

The net result is a lower energy than a proton and a hydrogen atom.

III:11-7, Eq 11.24

$$i\hbar\frac{d}{dt}|\psi\rangle = -\mu\sum_i \left(B_z\hat{\sigma}_x + B_y\hat{\sigma}_y + B_z\hat{\sigma}_z\right)|i\rangle\langle i|\psi\rangle. \quad (11.24)$$

Incorrect subscript on first term in sum ('z' vs. 'x')

$$i\hbar\frac{d}{dt}|\psi\rangle = -\mu\sum_i \left(B_x\hat{\sigma}_x + B_y\hat{\sigma}_y + B_z\hat{\sigma}_z\right)|i\rangle\langle i|\psi\rangle. \quad (11.24)$$

III:11-7, par 3, unnumbered Eq just above Eq 11.25

$$\langle +|\hat{\sigma}_z|+\rangle = \sigma_{11} = 1$$

Missing superscript '*z*'.

$$\langle +|\hat{\sigma}_z|+\rangle = \sigma_{11}^z = 1$$

III:11-7, par 3, unnumbered Eq just above Eq 11.26

$$\langle -|\hat{\sigma}_z|+\rangle = \sigma_{21} = 0;$$

Missing superscript '*z*'.

$$\langle -|\hat{\sigma}_z|+\rangle = \sigma_{21}^z = 0;$$

III:11-7, Table 11-3

$$
\begin{aligned}
\sigma_z\,|+\rangle &= |+\rangle\\
\sigma_z\,|-\rangle &= -|-\rangle\\
\sigma_x\,|+\rangle &= |-\rangle\\
\sigma_x\,|-\rangle &= |+\rangle\\
\sigma_y\,|+\rangle &= i\,|-\rangle\\
\sigma_y\,|-\rangle &= -i\,|+\rangle
\end{aligned}\quad;
$$

Every sigma is missing it's hat.

$$
\begin{aligned}
\hat{\sigma}_z\,|+\rangle &= |+\rangle\\
\hat{\sigma}_z\,|-\rangle &= -|-\rangle\\
\hat{\sigma}_x\,|+\rangle &= |-\rangle\\
\hat{\sigma}_x\,|-\rangle &= |+\rangle\\
\hat{\sigma}_y\,|+\rangle &= i\,|-\rangle\\
\hat{\sigma}_y\,|-\rangle &= -i\,|+\rangle
\end{aligned}
$$

III:11-11, Eq 11.34

$$
\begin{aligned}
|R\rangle &= \frac{1}{\sqrt{2}}\big(\,|x\rangle + i|y\rangle\big),\\
|L\rangle &= -\frac{1}{\sqrt{2}}\big(\,|x\rangle - i|y\rangle\big).
\end{aligned}
\tag{11.34}
$$

Wrong sign (right-hand side of 2nd equation).

$$
\begin{aligned}
|R\rangle &= \frac{1}{\sqrt{2}}\big(\,|x\rangle + i|y\rangle\big),\\
|L\rangle &= \frac{1}{\sqrt{2}}\big(\,|x\rangle - i|y\rangle\big).
\end{aligned}
\tag{11.34}
$$

III:11-11, Eq 11.35 (introduced in 1st printing of Definitive Edition)

$$|x\rangle = \frac{1}{\sqrt{2}}\left(|R\rangle - |L\rangle\right),$$
$$|y\rangle = -\frac{i}{\sqrt{2}}\left(|R\rangle + |L\rangle\right). \qquad (11.35)$$

Wrong signs (between $|R\rangle$ and $|L\rangle$ in both equations) .

$$|x\rangle = \frac{1}{\sqrt{2}}\left(|R\rangle + |L\rangle\right),$$
$$|y\rangle = -\frac{i}{\sqrt{2}}\left(|R\rangle - |L\rangle\right). \qquad (11.35)$$

III:11-12, par 1

Just substitute x' from Eq.(11. 33) and the corresponding $|y'\rangle$—

(1) Brackets are missing around x' and (2) there should be a space between "Eq" and "(" but no space between "11." and "33".

Just substitute $|x'\rangle$ from Eq. (11.33) and the corresponding $|y'\rangle$—

III:11-22, par 2

(We will use **n** to represent the *n*th Roman numeral, so that **n** takes on the values I, II, . . . , **N**.)

The Roman numerals should be italic, as per Eq 11.64.

(We will use **n** to represent the *n*th Roman numeral, so that **n** takes on the values *I*, *II*, . . . , **N**.)

III:12-11, Fig 12-3 (not corrected in 1st printing)

$-\mu - \mu' B$

Error in label (asymptote to energy level E_{IV}).

$-A - \mu' B$

III:13-10, par 4

There are, of course, all the other equations for $|n|$ is greater than 2. They will look just like Eq. (13.16).

Incorrect reference.

There are, of course, all the other equations for $|n|$ is greater than 2. They will look just like Eq. (13.6).

III:13-11, Eq 13-34

$$a_0 = 1 + \beta; \qquad (13.34)$$

Incorrect punctuation (";" vs. ",").

$$a_0 = 1 + \beta, \qquad (13.34)$$

III:13-11, Eq 13-36

$$\gamma = 1 + \beta \qquad (13.36)$$

Incorrect punctuation (missing '.' at end of sentence).

$$\gamma = 1 + \beta. \qquad (13.36)$$

III:13-12, par 3

Let's set $k = i\kappa$.

Incomplete statement (see Eqs 13.39 and 13.40).

Let's set $k = \pm i\kappa$.

III:14-6, par 4 [partially stetted – check 2nd printing]

Also they will very rapidly with temperature (like $e^{-E_{gap}/\kappa T}$, as we have seen),

Missing factor of '2' in denominator of exponent (as per III:14-4, par 2).

Also they will very rapidly with temperature (like $e^{-E_{gap}/2\kappa T}$, as we have seen),

III:14-9, Eq 14.10

$$\frac{N_p\left(p-side\right)}{N_p\left(n-side\right)}=e^{-q_p V/\kappa T} \qquad (14.10)$$

Ratio is reversed. The holes on the p-side have to climb a potential wall to reach the n-side. Therefore $N_p\left(n-side\right)$ should be smaller than $N_p\left(p-side\right)$, as per Eq (14.12). [NOTE: Eq (14.11) is correct, since q_n is negative.]

$$\frac{N_p\left(n-side\right)}{N_p\left(p-side\right)}=e^{-q_p V/\kappa T} \qquad (14.10)$$

III:15-6, par 3

Our solution looks like a compound state of one particle with the momentum $p_1=\hbar/k_1$ and another particle with the momentum $p_2=\hbar/k_2$,

Wrong momentum/wave number relation ('$\hbar/k$' vs '$\hbar k$').

Our solution looks like a compound state of one particle with the momentum $p_1=\hbar k_1$ and another particle with the momentum $p_2=\hbar k_2$,

III:15-11, Fig 15-14, caption

The points of Fig. 15-12 with a smooth curve.

Incorrect reference.

The points of Fig. 15-13 with a smooth curve.

III:16-12, par 2, unnumbered Eq

$$i\hbar\frac{d}{dt}\langle i|\psi\rangle = \sum_j \left\langle i\left|\hat{H}\right|j\right\rangle\langle j|\psi\rangle$$

The derivative should be partial; $\langle i|\psi\rangle$ depends on both x and t.

$$i\hbar\frac{\partial}{\partial t}\langle i|\psi\rangle = \sum_j \left\langle i\left|\hat{H}\right|j\right\rangle\langle j|\psi\rangle$$

III:16-12, Eq 16.50

$$i\hbar \frac{d}{dt}\langle x|\psi\rangle = \int \langle x|\hat{H}|x'\rangle\langle x'|\psi\rangle\, dx' \qquad (16.50)$$

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

$$i\hbar \frac{\partial}{\partial t}\langle x|\psi\rangle = \int \langle x|\hat{H}|x'\rangle\langle x'|\psi\rangle\, dx' \qquad (16.50)$$

III:16-12, Eq 16.51, top

$$i\hbar \frac{d}{dt}\psi(x) = \int H(x,x')\psi(x')\, dx' \qquad (16.51)$$

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

$$i\hbar \frac{\partial}{\partial t}\psi(x) = \int H(x,x')\psi(x')\, dx' \qquad (16.51)$$

III:16-12, par 3, unnumbered Eq

$$\int H(x,x')\psi(x')\, dx' = -\frac{\hbar^2}{2m}\frac{d^2}{dx^2}\psi(x)$$

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

$$\int H(x,x')\psi(x')\, dx' = -\frac{\hbar^2}{2m}\frac{\partial^2}{\partial x^2}\psi(x)$$

III:16-12, Eq 16.52

$$\int H(x,x')\psi(x')\, dx' = -\frac{\hbar^2}{2m}\frac{d^2}{dx^2}\psi(x) + V(x)\psi(x)$$

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

$$\int H(x,x')\psi(x')\, dx' = -\frac{\hbar^2}{2m}\frac{\partial^2}{\partial x^2}\psi(x) + V(x)\psi(x)$$

III:16-13, par 2, 2nd unnumbered Eq

$$H(x,x') = \left\{ -\frac{\hbar^2}{2m}\frac{d^2}{dx^2} + V(x) \right\} \delta(x-x')$$

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

$$H(x,x') = \left\{ -\frac{\hbar^2}{2m}\frac{\partial^2}{\partial x^2} + V(x) \right\} \delta(x-x')$$

III:16-13, par 4

The only changes are that d^2/dx^2 gets replaced by

The derivative should be partial; $\langle x|\psi\rangle = \psi(x)$ depends on both x and t.

The only changes are that $\partial^2/\partial x^2$ gets replaced by

III:16-14, Eq 16.55

$$-i\hbar\frac{\partial\psi(\boldsymbol{r}_1,\boldsymbol{r}_2,\boldsymbol{r}_3,\ldots)}{\partial t} = \sum_i \frac{\hbar^2}{2m_i}\left\{ \frac{\partial^2\psi}{\partial x_i^2} + \frac{\partial^2\psi}{\partial y_i^2} + \frac{\partial^2\psi}{\partial z_i^2} \right\} + V(\boldsymbol{r}_1,\boldsymbol{r}_2,\ldots)\psi\,. \qquad (16.55)$$

The minus sign on the left is misplaced - it needs to be moved to the first term on the right.

$$i\hbar\frac{\partial\psi(\boldsymbol{r}_1,\boldsymbol{r}_2,\boldsymbol{r}_3,\ldots)}{\partial t} = \sum_i -\frac{\hbar^2}{2m_i}\left\{ \frac{\partial^2\psi}{\partial x_i^2} + \frac{\partial^2\psi}{\partial y_i^2} + \frac{\partial^2\psi}{\partial z_i^2} \right\} + V(\boldsymbol{r}_1,\boldsymbol{r}_2,\ldots)\psi\,. \qquad (16.55)$$

III:18-4, par 3

…the classical theory of light scattering we gave in Vol. 1, Section 32-5,

FLP Volume number should be Roman (‘1’ vs ‘I’).

…the classical theory of light scattering we gave in Vol. I, Section 32-5,

III:18-16, par 1

We have found our two Clebsch-Gordon coefficients α and β in Eq. (18.46):

Proper name misspelled ('Gordon' vs. 'Gordan'). See error III:18-15, par 4.

We have found our two Clebsch-Gordan coefficients α and β in Eq. (18.46):

III:18-16, par 2

We summarize (18.45), (18.48), and (18.50) in Table 18-5.

Incomplete statement.

We summarize (18.45), (18.48), (18.50) and (18.51) in Table 18-5.

III:18-20, par 1

The result is a phase change of $i(r/2-s/2)\phi$.

The change in phase is a (real) angle and should not be multiplied by i.

The result is a phase change of $(r/2-s/2)\phi$.

III:18-20, par 1

Just as for $J=\frac{3}{2}$, each state of definite *m* must be…

Incorrect capitalization (in this section and in section 18-4 to which it refers the total angular momentum is *j,* not *J* as it is in the rest of section 18-6).

Just as for $j=\frac{3}{2}$, each state of definite *m* must be…

III:18-20, par 3, after Eq 18.64

where $C=\cos\theta/2$ and $S=\sin\theta/2$.

Wrong sign (compare Table 17-1). Note: this is the source of the error in Eq 18.35.

where $C=\cos\theta/2$ and $S=-\sin\theta/2$.

III:18-21, Eq 18.67

$$R_y(\theta)\left|\begin{matrix} r \\ s \end{matrix}\right\rangle = \sum_{r'=0}^{r+s} B_{r'} \left[\frac{r'+s'}{r'!s'!}\right]^{1/2} \left\{|+\rangle^{r'}|-\rangle^{s'}\right\}_{\text{perm}}. \qquad (18.67)$$

Missing factorial operator (!) on $r'+s'$.

$$R_y(\theta)\left|\begin{matrix} r \\ s \end{matrix}\right\rangle = \sum_{r'=0}^{r+s} B_{r'} \left[\frac{(r'+s')!}{r'!s'!}\right]^{1/2} \left\{|+\rangle^{r'}|-\rangle^{s'}\right\}_{\text{perm}}. \qquad (18.67)$$

III:19-5, par 2

If it just happened by luck that α were equal to $1/n$, where n is any integer,

Innacurate statement.

If it just happened by luck that α were equal to $1/n$, where n is any positive integer,

III:19-7, Eq 19.34

$$a = \sqrt{\frac{4}{2l+1}}. \qquad (19.34)$$

Incorrect value for the usual definition of spherical harmonics. (See, for example, Schiff's "Quantum Mechanics," or Jackson's "Classical Electrodynamics.")

$$a = \sqrt{\frac{4\pi}{2l+1}}. \qquad (19.34)$$

III:19-9, Table 19-1, row l = 2, m = +1

2	+1	$\frac{\sqrt{6}}{2}\sin\theta\cos\theta e^{i\phi}$	d	5	+

Wrong sign for angular dependence of amplitudes.

2	+1	$-\frac{\sqrt{6}}{2}\sin\theta\cos\theta e^{i\phi}$	d	5	+

III:19-9, Table 19-1, row l = 2, m = –1

2	-1	$-\frac{\sqrt{6}}{2}\sin\theta\cos\theta e^{i\phi}$	d	5	+

Wrong sign for angular dependence of amplitudes.

2	-1	$\frac{\sqrt{6}}{2}\sin\theta\cos\theta e^{i\phi}$	d	5	+

III:19-9, Table 19-1, row l = 3, 4, 5…, angular dependence of amplitudes

$$\langle l,0|R_y(\theta)\,R_z(\phi)|l,m\rangle$$
$$=Y_{l,m}(\theta,\phi)$$
$$=P_l^m(\cos\theta)e^{im\phi}$$

Missing factor 'a' on $Y_{l,m}(\theta,\phi)$ (see Eq 19.33).

$$\langle l,0|R_y(\theta)\,R_z(\phi)|l,m\rangle$$
$$=a\,Y_{l,m}(\theta,\phi)$$
$$=P_l^m(\cos\theta)e^{im\phi}$$

III:19-10, Eq 19-37

$$\psi_{l,m}(\boldsymbol{r})=Y_{l,m}(\theta,\phi)\,F_l(r)\,. \qquad (19.37)$$

Missing factor 'a' (see Eq 19.35) [Note: the 'a' cancels in Eq 19.38].

$$\psi_{l,m}(\boldsymbol{r})=a\,Y_{l,m}(\theta,\phi)\,F_l(r)\,. \qquad (19.37)$$

III:19-10, par 1

Equation (19.35) is therefore equivalent to *two* equations:

Incorrect reference ('19.35' vs. '19.39').

Equation (19.39) is therefore equivalent to *two* equations:

III:19-10, Eq 19-41

$$\frac{1}{r}\frac{\partial^2}{\partial r^2}(rF_l)+\frac{2m}{\hbar^2}\left(E+\frac{e^2}{r}\right)F_l=K_l\frac{F_l}{r^2}. \qquad (19.41)$$

Partial derivative used where total derivative should be used for consistency (compare Eq 19.39 and Eq 19.46).

$$\frac{1}{r}\frac{d^2}{dr^2}(rF_l)+\frac{2m}{\hbar^2}\left(E+\frac{e^2}{r}\right)F_l=K_l\frac{F_l}{r^2}. \qquad (19.41)$$

III:19-10, footnote

Under the rotation the amplitude that an up-spin remains up is $\cos\theta/2$, and that an up-spin goes down is $\sin\theta/2$. We are asking for the amplitude that *l* up-spins stay up, while the other *l* up-spins go down. The amplitude for that is $(\cos\theta/2\,\sin\theta/2)^l$ which is proportional to $\sin^l\theta$.

(Two) wrong signs (see Table 17-1).

Under the rotation the amplitude that an up-spin remains up is $\cos\theta/2$, and that an up-spin goes down is $-\sin\theta/2$. We are asking for the amplitude that *l* up-spins stay up, while the other *l* up-spins go down. The amplitude for that is $(-\cos\theta/2\,\sin\theta/2)^l$ which is proportional to $\sin^l\theta$.

III:19-12, par 1

This condition replaces Eq. (19.21) by

Incorrect reference.

This condition replaces Eq. (19.22) by

III:19-12, par 2

We get again the same condition on α, that it must be equal to $1/n$, where n is some integer.

Innacurate statement.

We get again the same condition on α, that it must be equal to $1/n$, where n is some positive integer.

III:19-12, Eq 19.52

$$\psi_{n,l,m} = Y_{l,m}(\theta,\phi)\,F_{n,l}(\rho) \qquad (19.52)$$

Missing factor 'a' (see Eq 19.35).

$$\psi_{n,l,m} = a\,Y_{l,m}(\theta,\phi)\,F_{n,l}(\rho) \qquad (19.52)$$

III:19-13, par 2

$$"x" = \frac{|1,+1\rangle + |1,-1\rangle}{\sqrt{2}},$$
$$"y" = \frac{|1,+1\rangle - |1,-1\rangle}{i\sqrt{2}}.$$

Wrong signs (four of them).

$$"x" = -\frac{|1,+1\rangle - |1,-1\rangle}{\sqrt{2}},$$
$$"y" = -\frac{|1,+1\rangle + |1,-1\rangle}{i\sqrt{2}}.$$

III:19-13, par 5

If you look at the way the radial functions $F(r)$ vary for small r,

Missing subscripts 'n,l' on F.

If you look at the way the radial functions $F_{n,l}(r)$ vary for small r,

III:19-13, Fig 19-7

Since $\sqrt{E}$ (rather than E) is graphed, the energy of the lowest state should be changed from $-13.6\,\text{ev}$ to $-\sqrt{13.6\,\text{ev}}$

III:19-16, par 5

And sulphur is similar.

Non-standard spelling ('sulphur' vs. 'sulfur').

And sulfur is similar.

III:19-16, par 5

That explains the break in the sequence of binding energies which appears between nitrogen and oxygen, and between phosphorus and silicon.

Wrong element ('silicon' vs. 'sulfur'). See Table 19-2.

That explains the break in the sequence of binding energies which appears between nitrogen and oxygen, and between phosphorus and sulfur.

III:19-17, par 9

Nitrogen has room for three more 2*p* electrons, on each for the "*x*," "*y*," and "*z*" type states.

Typographical error ("on" vs. "one").

Nitrogen has room for three more 2*p* electrons, one each for the "*x*," "*y*," and "*z*" type states.

III:20-6, Eq 20.27

$$\langle E\rangle_{\text{av}} = \int \psi^*(x)\left\{-\frac{\hbar^2}{2m}\frac{d^2}{dx^2}+V\right\}\psi(x)\,dx\,. \tag{20.27}$$

The scalar potential 'V' is missing it's argument '(x)'.

$$\langle E\rangle_{\text{av}} = \int \psi^*(x)\left\{-\frac{\hbar^2}{2m}\frac{d^2}{dx^2}+V(x)\right\}\psi(x)\,dx\,. \tag{20.27}$$

III:20-6, par 4

$$\hat{\mathcal{H}} = -\frac{\hbar^2}{2m}\frac{d^2}{dx^2}+V\,.$$

The scalar potential 'V' is missing it's argument '(x)'.

$$\hat{\mathcal{H}} = -\frac{\hbar^2}{2m}\frac{d^2}{dx^2}+V(x)\,.$$

III:20-8, par 2

… where $P(x)$ is the probability of finding the electron in a little element *dx* at *x*.

Incorrect statement.

… where $P(x)dx$ is the probability of finding the electron in a little element *dx* at *x*.

III:20-16, par 2

If we take the complex conjugate of this equation, it is equivalent to…

Incorrect reference ("this equation" implies the immediately preceding equation, which is 20.79, but what follows is the complex conjugate of equation 20.78).

If we take the complex conjugate of Eq. (20.78), it is equivalent to…

III:21-3, par 3

…a plane parallel to the *y-z* plane…

Typographical error (as per Commemorative Edition errata III:17-14, par 3).

…a plane parallel to the *yz*-plane…

III:21-4, Eq 21.10

$$\begin{aligned}\frac{\partial P}{\partial t} = -\frac{i}{\hbar}\Big[&\psi^* \frac{1}{2m}\left(\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\cdot\left(\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\psi + q\phi\psi^*\psi \\ &+\psi\frac{1}{2m}\left(\frac{\hbar}{i}\nabla + q\boldsymbol{A}\right)\cdot\left(\frac{\hbar}{i}\nabla + q\boldsymbol{A}\right)\psi^* - q\phi\psi\psi^*\Big]\end{aligned}. \qquad (21.10)$$

The third term on the right has the wrong sign. Also, the product $\left(\frac{\hbar}{i}\nabla + q\boldsymbol{A}\right)\left(\frac{\hbar}{i}\nabla + q\boldsymbol{A}\right)$ should be changed to $\left(-\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\left(-\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)$ in order to match Eq 21.11.

$$\begin{aligned}\frac{\partial P}{\partial t} = -\frac{i}{\hbar}\Big[&\psi^* \frac{1}{2m}\left(\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\cdot\left(\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\psi + q\phi\psi^*\psi \\ &-\psi\frac{1}{2m}\left(-\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\cdot\left(-\frac{\hbar}{i}\nabla - q\boldsymbol{A}\right)\psi^* - q\phi\psi\psi^*\Big]\end{aligned}. \qquad (21.10)$$

III:21-4, par 1

It is a symmetrical combination of ψ^* times a certain operation on ψ, plus ψ^* times the complex conjugate operation on ψ.

Inaccurate statement.

It is a symmetrical combination of ψ^* times a certain operation on ψ, plus ψ times the complex conjugate operation on ψ^*.

III:21-4, Eq 21.12 [error in page proof – check 2nd printing]

$$\boldsymbol{J} = \frac{1}{2}\left\{\left[\frac{\hat{\mathcal{P}} - q\boldsymbol{A}}{m}\psi\right]^*\psi + \psi^*\left[\frac{\hat{\mathcal{P}} - q\boldsymbol{A}}{m}\right]\psi\right\}. \qquad (21.12)$$

In order to correspond more clearly with the text (see correction for III:21-4, par 1) and with Eq 21.11, this equation should be rewritten.

$$\boldsymbol{J} = \frac{1}{2}\left\{\psi^*\left[\frac{\hat{\mathcal{P}} - q\boldsymbol{A}}{m}\right]\psi + \psi\left[\frac{\hat{\mathcal{P}} - q\boldsymbol{A}}{m}\right]^*\psi^*\right\}. \qquad (21.12)$$

III:21-6, par 2

… if I look in any volume $dx\ dy\ dz$ I will generally find a number close to $\psi\psi^*\ dx\ dy\ dz$.

There should be no spaces between $dx\ dy$ and dz (2 occurences).

… if I look in any volume $dxdydz$ I will generally find a number close to $\psi\psi^* dxdydz$.

III:21-8, par 1

There's more amplitude to go into the same state than into an unoccupied state by the famous factor $\sqrt{n}$, where n is the occupancy of the lowest state.

Factor is not consistent with occupancy (see Eq 4.25).

There's more amplitude to go into the same state than into an unoccupied state by the famous factor $\sqrt{n}$, where $n-1$ is the occupancy of the lowest state.

III:21-11, par 3

… and at about the same time by Doll and Nabauer[12] in Germany

Typographical error ('a' vs. 'ä' in 'Näbauer').

… and at about the same time by Doll and Näbauer [12] in Germany

III:21-11, par 4

Then the exteternal source of field was removed.

Typographical error ('exteternal' vs. 'external').

Then the external source of field was removed.

III:21-11, footnote 12

[12] R. Doll and M. Nabauer, *Phys. Rev. Letters 7,* 51 (1961)

Typographical error ('a' vs. 'ä' in 'Näbauer').

[12] R. Doll and M. Näbauer, *Phys. Rev. Letters 7,* 51 (1961)

III:21-12, par 2

Doll and Nabauer got the same result.

Typographical error ('a' vs. 'ä' in 'Näbauer').

Doll and Näbauer got the same result.

III:21-12, par 3

Remember that ρ and θ are real functions of *x, y,* and *z*.

Incomplete statement.

Remember that ρ and θ are real functions of *x, y, z* and *t*.

III:21-12, footnote

It has once been suggested that this might happen (see F. London, Ref. 10),

Incorrect reference. The flux quantum was born in the footnote on p. 152 of the London book, but Onsager is not mentioned in that book. On the other hand, In the PRL of Deaver and Fairbank, they state in Ref. 3: "Such a possibility was mentioned by Lars Onsager to one of us (WMF) at the conference on superconductivity in Cambridge, England, 1959 (unpublished)."

It has once been suggested that this might happen (see Deaver and Fairbank, Ref. 11),

III:21-13, par 2

Taking the gradient of the whole of Eq. (21.33) and expressing $\nabla\theta$ in terms of $\boldsymbol{A}$ and $\boldsymbol{v}$ by using (21.31),

The ∇ operator on θ should be bold (as per Eq 21.31).

Taking the gradient of the whole of Eq. (21.33) and expressing $\boldsymbol{\nabla}\theta$ in terms of $\boldsymbol{A}$ and $\boldsymbol{v}$ by using (21.31),

III:21-13, Eq 21.35

$$-\nabla\phi - \frac{\partial \boldsymbol{A}}{\partial t} = \boldsymbol{E}\ . \tag{21.35}$$

The ∇ operator on ϕ should be bold (as per Eq 21.34).

$$-\boldsymbol{\nabla}\phi - \frac{\partial \boldsymbol{A}}{\partial t} = \boldsymbol{E}\ . \tag{21.35}$$

III:21-13, par 2

Next notice that if I take the curl of Eq. (21.19),

This is not an error, but Eq (21.19) is the same as Eq (21.31) on the facing page, making it much more convenient to refer to.

Next notice that if I take the curl of Eq. (21.31),

III:21-15, par 2

This current from side 1 to side 2 would be just $\dot{\rho}_1(\text{or } -\dot{\rho}_2)$,

Typographical error. There should be a space between $\dot{\rho}_1$ and $(\text{or } -\dot{\rho}_2)$.

This current from side 1 to side 2 would be just $\dot{\rho}_1\ \ (\text{or } -\dot{\rho}_2)$,