

Errata for The Feynman Lectures on Physics Volume III New Millennium Edition (Newly Reported)

The errors in this list appear in *The Feynman Lectures on Physics: New Millennium Edition* and earlier editions; errors validated by Caltech will be corrected in future printings of the *New Millennium Edition* or in future editions.

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.

last updated: 4/7/2012 11:25 AM

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Global change: ev -> eV, Mev -> MeV [approved]

The abbreviation for electron volt has been changed from 'ev' to 'eV' throughout this volume; it has been changed on the following pages (for the following number of occurrences, if more than one):

ev: 2-6(2), 10-4, 10-8, 10-11, 14-4(3), 19-13, 19-14, 19-15
Mev: 14-3, 18-13, 18-14(4), index

III:4-14, par 1 [approved]

(Experimentally, it takes 25 volts to ionize helium but only 5 volts to ionize lithium.)

Feynman never said this; It was added by the editor (Sands). The voltages referred to are ionization potentials. However, the concept of an ionization potential is not discussed anywhere in FLP, only ionization energies are discussed. So, for example, in III:19 pages 14-15, one finds "The observed ionization energy (to remove one electron) [from Helium] is 24.6 electron volts." and "The ionization energy of lithium is only 5.4 electron volts." For consistency (and to avoid confusion) these ionization potentials should be changed to the equivalent energies:

(Experimentally, it takes 25 electron volts to ionize helium but only 5 electron volts to ionize lithium.)

III:4-15, par 1 [approved]

The deuteron is, as a matter of fact, bound by an energy of about 2.2 million volts, ...

Inaccurate statement; "about 2.2 million volts" is not an energy, but an electric potential.

The deuteron is, as a matter of fact, bound by an energy of about 2.2 million electron volts, ...

III:12-1, par 3 [approved]

The four spin states do not all have exactly the same energy; there are slight shifts from the energies we would expect with no spins. The shifts are, however, much, much smaller than the 10 volts or so from the ground state to the next state above.

Inaccurate statement; "10 volts" is not an energy, but an electric potential.

The four spin states do not all have exactly the same energy; there are slight shifts from the energies we would expect with no spins. The shifts are, however, much, much smaller than the 10 electron volts or so from the ground state to the next state above.

III:12-1, par 4 [approved]

These energy shifts are only about ten-millionths of an electron volt—really very small compared with 10 volts!

Comparison of an energy to a potential (which have different dimensions); This could easily confuse a beginner. For consistency "10 volts" should be "10 electron volts."

These energy shifts are only about ten-millionths of an electron volt—really very small compared with 10 electron volts!

III:19-16, par 3 [approved]

By the time we get to neon the ionization energy is up to 21.6 volts.

Inaccurate statement; "21.6 volts" is not an energy, but an electric potential.

By the time we get to neon the ionization energy is up to 21.6 electron volts.