

Unofficial list of corrections for “Spacetime and Geometry (an Introduction to General Relativity)”, by Sean M. Carroll, Pearson/Addison-Wesley 2004 and Cambridge University Press 2019 printings

This list was updated January 12, 2026 by [Steve Martin](#).

The list of corrections at <http://spacetimeandgeometry.net/> is out of date, and applies only to very old versions of this book. As far as I know, Carroll does not maintain a list of corrections for the more recent printings. The following list is intended to fill that gap.

- page 18, between equations (1.41) and (1.43): Not an error, but worth noting: as he explains, Carroll uses the same symbol Λ for the inverse of a Lorentz transformation as for the Lorentz transformation itself, relying on switching the role of primed and unprimed indices to make the distinction. In my opinion, the notational simplicity of his convention choice causes more confusion than it is worth. Therefore, in class, I will use the notation such that equation (1.42) is:

$$(\Lambda^{-1})^\mu{}_{\nu'} \Lambda^{\nu'}{}_\rho = \delta^\mu_\rho, \quad \Lambda^{\sigma'}{}_\lambda (\Lambda^{-1})^\lambda{}_{\tau'} = \delta^{\sigma'}_{\tau'}.$$

Note that in index-free matrix form, this is

$$\Lambda^{-1}\Lambda = I, \quad \Lambda\Lambda^{-1} = I,$$

where I is the identity tensor.

- page 80, equation (2.64): This is incorrect, and there are two different ways to make it right, depending on the choice of the branch of the multivalued arccotangent function. (I will use the notation arccot rather than \cot^{-1} , which means the same thing but is deprecated in modern texts.)
 - One choice is to use the continuous branch such that $\operatorname{arccot}(-\infty) = \pi$ and $\operatorname{arccot}(0) = \pi/2$ and $\operatorname{arccot}(\infty) = 0$. In that case, eq. (2.64) should read $\lambda = \operatorname{arccot}(-t)$.
 - Another choice is to use the continuous branch such that $\operatorname{arccot}(-\infty) = 0$ and $\operatorname{arccot}(0) = -\pi/2$ and $\operatorname{arccot}(\infty) = -\pi$. In that case, eq. (2.64) should read $\lambda = -\operatorname{arccot}(t)$.
- page 96, equation (3.10): the plus sign should be a minus sign.
- page 274, equation (7.3): the primes on the right-hand side have the wrong heights.
- page 332, equation (8.44): there is a missing “=” on the third line, which should connect the first two Christoffel symbols on that line to the last one on that line.