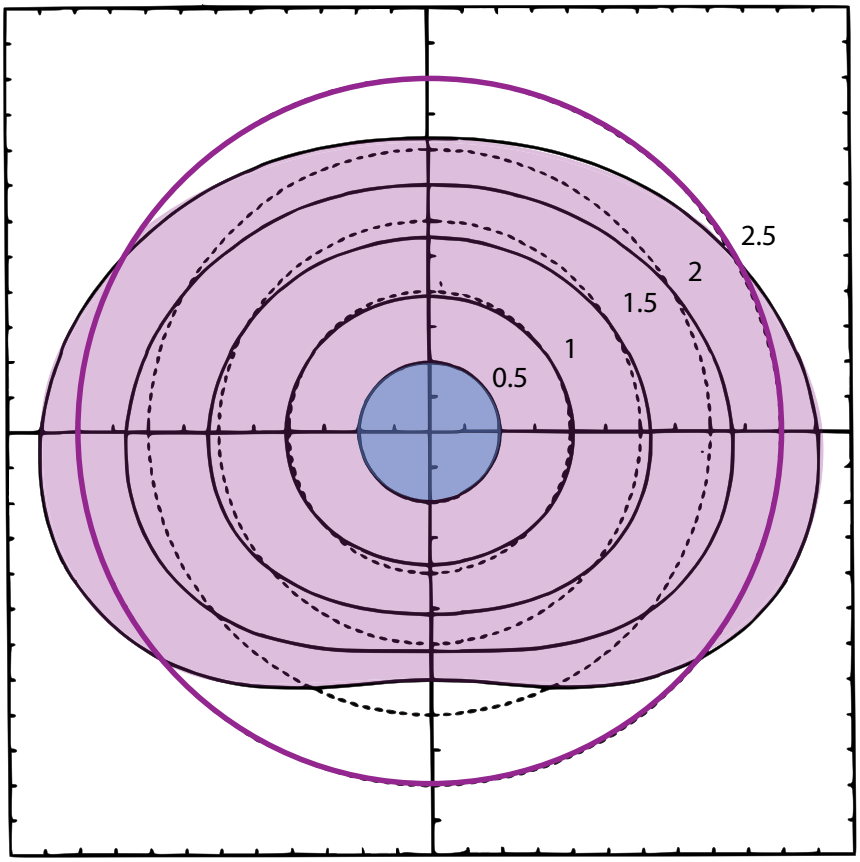
Errata/Changes 3 June 2025

1. First sentence of section 4.3.2: The range of cloud droplets should be stated as radii from 1 to 50 μm, not 1 to 100 μm.

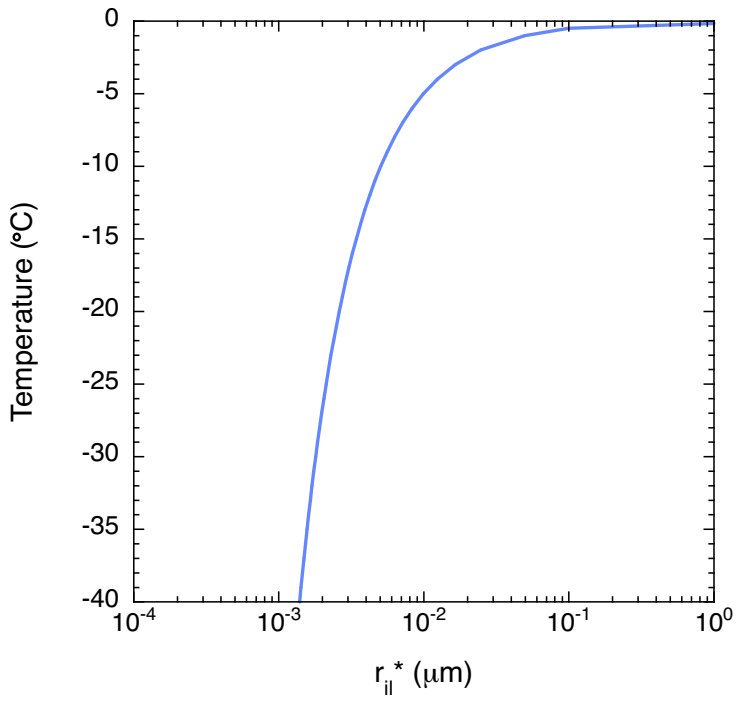
2. Fig. 4.15: the purple ring corresponding to the purple-shaded, flattened shape should have been at 2.5 mm, not at 3 mm. Fixed figure shown below.




3. Phrase immediately following (5.6): Text was incorrect, because the value of $Z_h$ in (5.6) cannot be computed using (5.2) that assumes Rayleigh scattering principles (spherical drops). A more accurate phrase is "where $Z_h$ is the measured radar reflectivity for the horizontally polarized signal, and $Z_v$ is that measured for the vertically polarized signal."

4. A couple of lines preceding (6.6): the value of *n* appropriate for hexagonal ice was omitted. It is approximately $3.065 \times 10^{28}$ $m^{-3}$.

5. Fig. 6.7: bottom axis should have been labeled as $r^*_{il}$, to be consistent with (6.10). Fixed figure shown below.

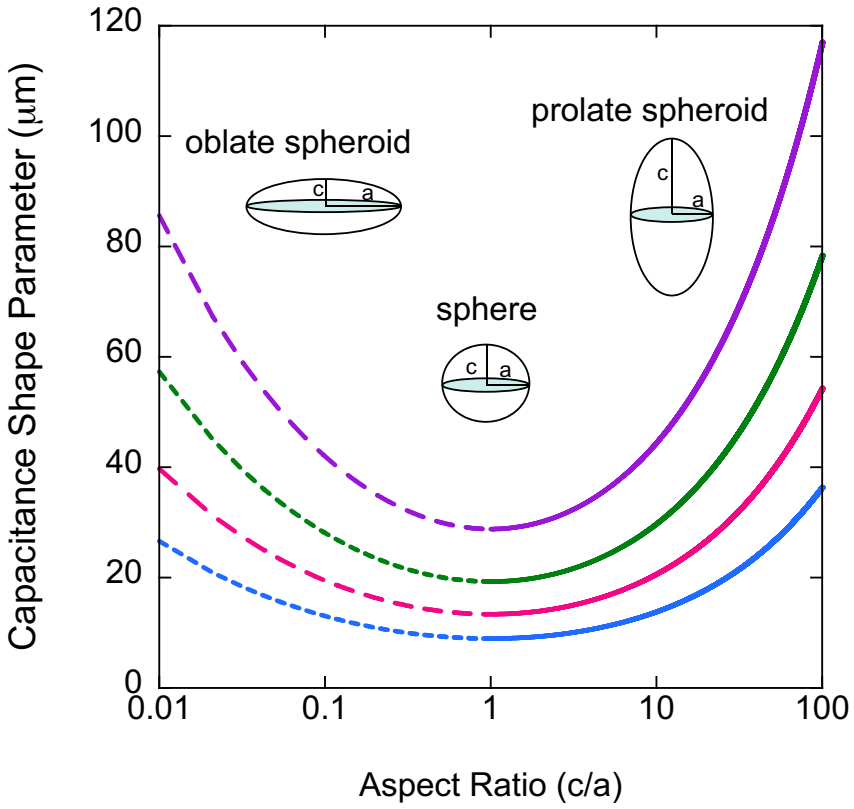



6. Text immediately preceding (7.5): should read "… can be written as the product of the right-hand sides of (6.5) and (7.4):"

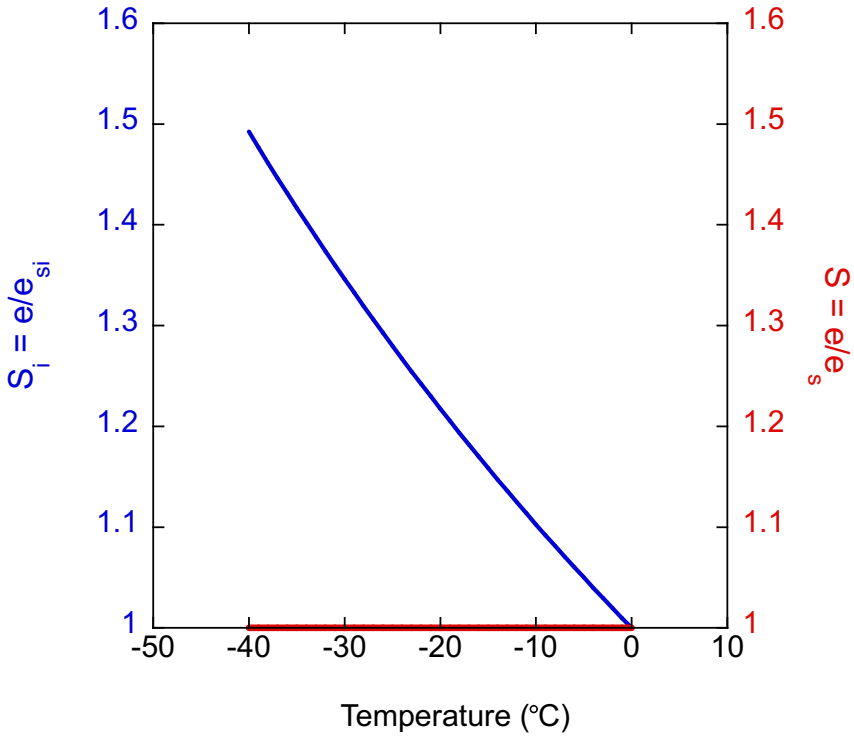
7. Chapter 9 first line: Should read "We now begin to study the possible chains of microphysical processes…"

8. Section 9.2.4, first line of second paragraph, the text directs the reader to (9.30), but this should instead be (9.26).

9. Fig. 9.14 had an incorrect label on vertical axis. Should read "Capacitance Shape Parameter (μm)". Fixed version shown below.




10. Fig. 9.16: A degree symbol was missing from the horizontal axis. Shown fixed here.



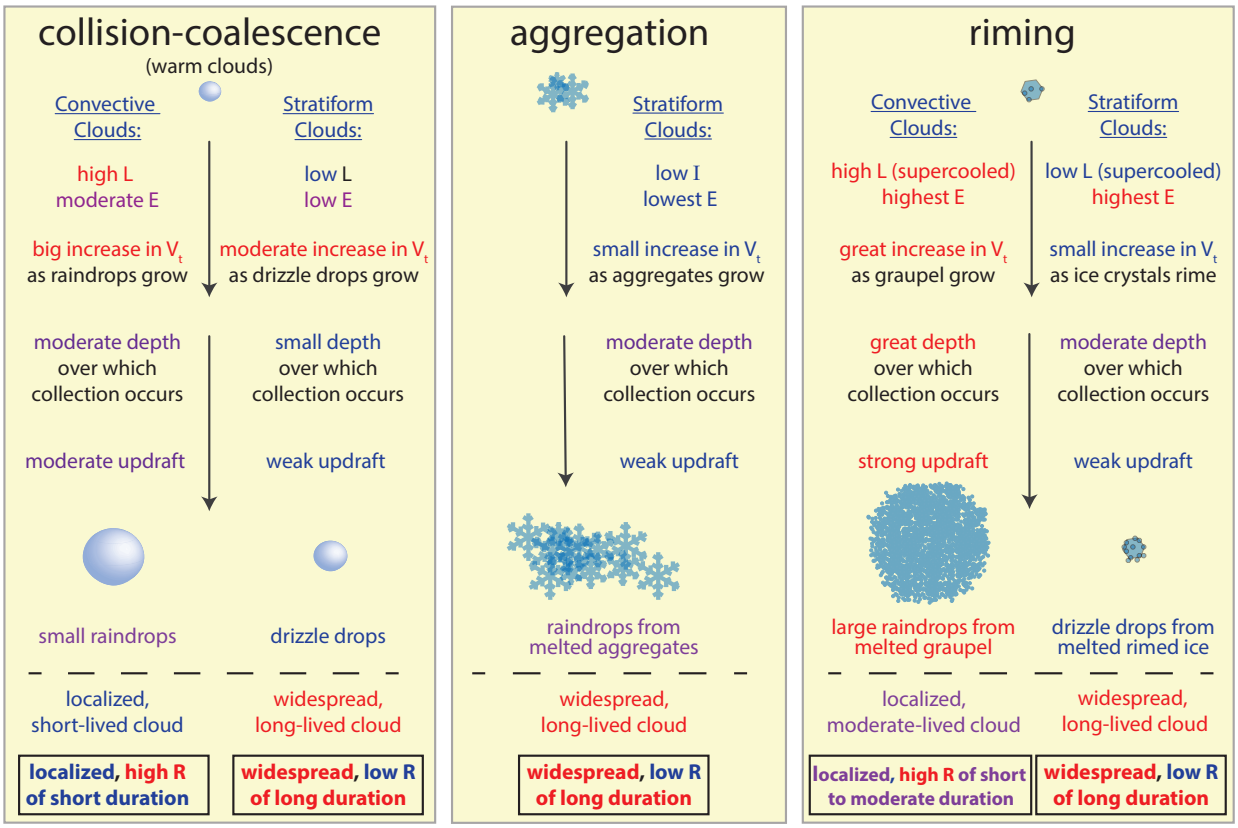
11. Paragraph immediately following Fig. 10.9: "… two different times are shown…" should be "two different times are highlighted…", because six different times are actually shown in this figure.

12. Fig. 10.14. Caption should read "Example of the spacing of droplets 20 μm in radius (gold) and droplets 30 μm in radius (blue)…"

13. Last paragraph before Section 13.5: This paragraph somehow lost its main point. Here is the new clarified paragraph (changes in red):

    "For example, supercell thunderstorms form in environments with substantial vertical wind shear. In numerical simulations of supercell thunderstorms, as the vertical wind shear in the environment increases, so do their updraft speeds. This allows the storm to ingest more water vapor per unit time to convert to precipitation. Indeed, observed rainfall rates from supercell thunderstorms are often extreme. However, the stronger updraft also carries more hydrometeor mass high into the anvil region of the storm, where it is unlikely to survive sublimation and evaporation before reaching the ground. Therefore, much of the enormous amount of water vapor ingested by the storm is never realized as precipitation at the ground, considerably reducing its PE."

14. Fig. 13.10: No errors per se, but a few descriptors have been changed to be consistent with others, i.e., using "low" instead of "small", etc. Fixed figure shown below.


collision-coalescence
(warm clouds)
Convective Clouds:
Stratiform Clouds:
high L
moderate E
low L
low E
big increase in V_t as raindrops grow
moderate increase in V_t as drizzle drops grow
moderate depth over which collection occurs
small depth over which collection occurs
moderate updraft
weak updraft
small raindrops
drizzle drops
localized, short-lived cloud
widespread, long-lived cloud
localized, high R of short duration
widespread, low R of long duration
aggregation
Stratiform Clouds:
low I
lowest E
small increase in V_t as aggregates grow
moderate depth over which collection occurs
weak updraft
raindrops from melted aggregates
widespread, long-lived cloud
widespread, low R of long duration
riming
Convective Clouds:
Stratiform Clouds:
high L (supercooled)
highest E
low L (supercooled)
highest E
great increase in V_t as graupel grow
small increase in V_t as ice crystals rime
great depth over which collection occurs
moderate depth over which collection occurs
strong updraft
weak updraft
large raindrops from melted graupel
drizzle drops from melted rimed ice
localized, moderate-lived cloud
widespread, long-lived cloud
localized, high R of short to moderate duration
widespread, low R of long duration