



Corrigendum to “The relative impact of cloud condensation nuclei and ice nucleating particle concentrations on phase partitioning in Arctic mixed-phase stratocumulus clouds” published in Atmos. Chem. Phys., 18, 17047–17059, 2018

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Final edits in response to the reviewers' comments not included in the published paper are listed below:

Abstract, p. 17047, left column, lines 12–13: “...perturbations, i.e., ...” should read “...perturbations, i.e., a run with ...”.

Introduction, p. 17048, left column, lines 17–19: “... note that only a few INPs are needed to glaciate a cloud (see discussion in DeMott et al. 2010).” should read “... note that an environment with a few INPs per liter or limited CCN can glaciate a mixed-phase cloud (DeMott et al., 2010; Mauritsen et al., 2011; Loewe et al., 2017; Stevens et al., 2018).”

Model Description, p. 17050, left column, line 9: “... in the simulations.” should read “... in the simulations. Therefore, snow water content is dependent on vapor deposition, auto-conversion from ice to snow, and sublimation.”

Model Results 5.1, p. 17052, left column, line 10: “... evaporates within 200 m of cloud base.” Should read “... evaporates from cloud base to 200 m below cloud base.”

Model Results 5.3, p. 17055, right column, line 42: “... below (Fig. 8a).” should read “... below (Fig. 8a). This turbulent transport is due to both resolved cloud-driven eddies, which mix the aerosols and hydrometeors to cloud top, and unresolved subgrid mixing, which mixes the aerosols into the inversion away from entrainment. This subgrid mixing into the inversion is due to the weak inversion at cloud top.”

Model Results 5.3, p. 17056, left column, line 1: “... prognostic CCN (Fig. 9).” should read “... prognostic CCN (Fig. 9). Cloud droplet concentrations are largest approximately 100 m above cloud base. At hour 10, the maximum cloud droplet concentration at 650 m is 330 cm⁻³. Figure 9a shows that allowing for prognostic CCN causes sharper cloud base and cloud-top droplet concentrations.”

Summary and Discussion, p. 17056, right column, line 10: “... to the system.” should read “... to the system. Results consistent with this study were found in Possner et al. (2017), which investigated the impact of ship emissions on mixed-phase stratocumulus observed during M-PACE. Possner et al. found increased CCN increased cloud top cooling, which increased ice mass due to vapor deposition, resulting in a decrease in vapor available for droplet formation. These results are consistent with the ConIce simulations, where an increase in CCN caused an increase in ice water content, primarily due to increased vapor deposition”.

References

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