

We would like to thank the editor for their suggested edits.

I. 139: replace reference by Van Stempvoort and Biggar, 2008 by (Šantl-Temkiv et al., 2022) since this reference refers to atmospherically relevant bacteria

Šantl-Temkiv, T., Amato, P., Casamayor, E. O., Lee, P. K. H. and Pointing, S. B.: Microbial ecology of the atmosphere, FEMS Microbiol. Rev., fuac009, doi:10.1093/femsre/fuac009, 2022.

This citation was added to the manuscript.

I. 238: replace SO4-2 by SO42-

The subscript was corrected on line 238.

I. 271: Is it indeed K⁺ and Ca²⁺ or more correctly K and Ca? The same question applies to Figure S8 and to the text in I. 317.

The subscripts were corrected for K and Ca on lines 271 and 317, and in the supplemental figure.

I. 287/8: 'June, July and September' 'during these four summer months' - should the latter read 'three summer months'?

We changed "these four summer months" to "any month" to state more clearly that there is no seasonality for any of the inorganic analytes

I. 335: Strictly, there is no pKa value for CO₃²⁻. pKa is the acid dissociation constant, but CO₃²⁻ is not an acid. It would be more accurate to write '... approximately the pKa value of HCO₃⁻'. Please add also the value 6.35 here (= -log(6.37e-7)), in agreement with the value you cite for Ka after Eq-3 (the value can be then removed in I. 345)

We corrected the sentence to say that pKa value is for HCO₃⁻ rather than CO₃²⁻ and included the pKa value for H₂CO₃ in this section as suggested.

I. 371: 'Assuming that the missing anions are organic acids' is not correct. Better 'Assuming that the missing anions are organic anions' or '...carboxylates'

We corrected the organic acids to carboxylates.

I. 437: Is 'particles' missing here? ('While these aerosol can make...')

The word particles was added to the sentence.

I. 599: The sentence 'For samples with pH>6, which are growing more common, HCO₃⁻ could be important.' Seems to contradict earlier text in line 386 'until the

pH approaches the pKa of CO_3^{2-} , where the influence of HCO_3^- then decreases.'
If you replace HCO_3^- by CO_3^{2-} in the first sentence, it could be correct. – Please check if this is what you want to say here.

We were a bit unclear how to write this section. It was intended to read that HCO_3^- becomes a more important anion as the pH increases beyond a pH of 6, but until it reaches the pKa of HCO_3^- , where the importance of CO_3^{2-} increases. We changed the sentence to read as follows:

The dissolution of CO_2 is a major source of HCO_3^- by partitioning into cloud droplets and hydrolyzing to form carbonic acid (H_2CO_3) with an acid dissociation constant of 4.37×10^{-7} ($\text{pK}_a = 6.36$). This contribution of HCO_3^- from CO_2 increases as pH increases until it reaches its pKa of 10.3, where the relative contribution of CO_3^{2-} becomes more important.