Atmospheric Chemistry and Physics Discussions

Atmos. Chem. Phys. Discuss., author comment AC1
https://doi.org/10.5194/acp-2021-806-AC1, 2021

Reply on CC1

Kristian Klumpp et al.

Author comment on "The impact of (bio-)organic substances on the ice nucleation activity of the K-feldspar microcline in aqueous solutions" by Kristian Klumpp et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-806-AC1, 2021

Dear Hinrich, thank you for pointing out the study by Zolles et al. (2015), in which freezing experiments of enzyme treated feldspar samples are described. We add a reference to this study in Sect. 4 (General discussion and implications) of the revised manuscript starting on line 404, stating:

"A reversible decrease of IN activity has also been observed by Zolles et al. (2015) after treating a microcline sample with papain and pronase E enzymes. The IN activity was restored after heating the enzyme-treated sample to 773 K. As enzymes consist of folded amino acid chains, the reduced IN activity of microcline in the presence of these proteins might be traced back to the blocking of nucleation sites through surface-adsorbed enzymes."