

Interactive comment on “The importance of mineral determinations to PROFILE base cation weathering release rates: A case study” by Sophie Casetou-Gustafson et al.

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We want to thank the editor Suzanne Andersson for her helpful comments. We agree with the editor and understand that the abstract needs to be improved. We also agree that hypothesis 1 can be misunderstood. We will clarify that site-specific mineralogy is determined in terms of the minerals identified and the chemical compositions of these minerals but not determined (directly) in terms of the abundance of these minerals, which is instead calculated by A2M. With regard to calcite, as per our response to the comment of Anonymous Reveiwer #1, we agree that it requires a brief mention and suggest that this could be done in paragraph 4.3.2. With regard to the details of the

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manuscript, we would like to clarify that the first modeled mineralogy is based on only some of the same data, the minerals present and their chemical compositions, not their abundances. We would also like to clarify that our aim was to test whether or not PROFILE based on normative calculations performed with A2M, produce an output in closer agreement with PROFILE based on mineralogy obtained from XRPD, if site specific mineralogical data are used as input to A2M and PROFILE rather than regional data. The latter means that both mineral identity and mineral stoichiometry have been based on measured data and given as an input to A2M. A2M then calculated the quantitative mineralogy based on this site-specific input. The reference quantitative mineralogy was solely determined by analytical measurements. Furthermore, we agree with the suggestion of briefly explaining how PROFILE works, and its long history, particularly in Sweden. We will make the required changes in the material and method section. With regard to figure 5, we agree that the layout could be improved. Minerals in the bars are now ranked from high-to-low abundance in the XRPD-bars. We are not sure the suggested change is the best for easy reading, but will remake alternative layouts, test them for readability and pick the best!

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