

# Supporting Information for ”Advancing Enhanced Weathering Modeling in Soils: Systematic Comparison and Validation with Experimental Data”

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## References

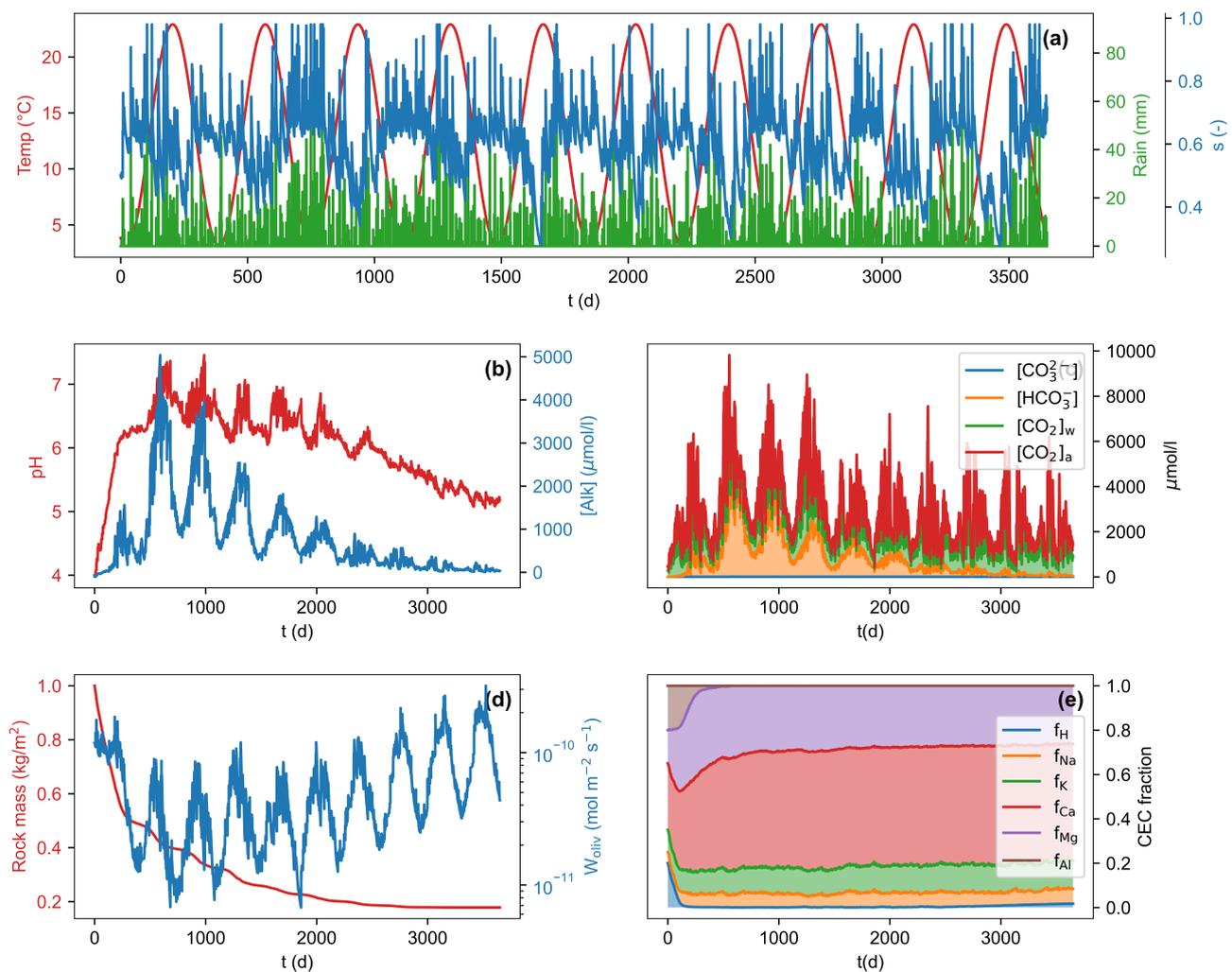
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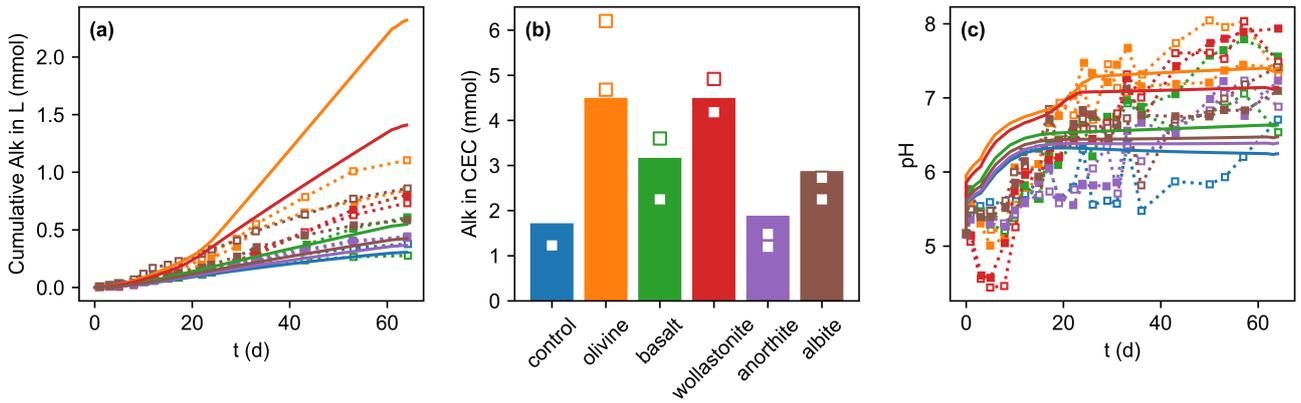
te Pas, E. E. E. M., Hagens, M., & Comans, R. N. J. (2023). Assessment of the enhanced weathering potential of different silicate minerals to improve soil quality

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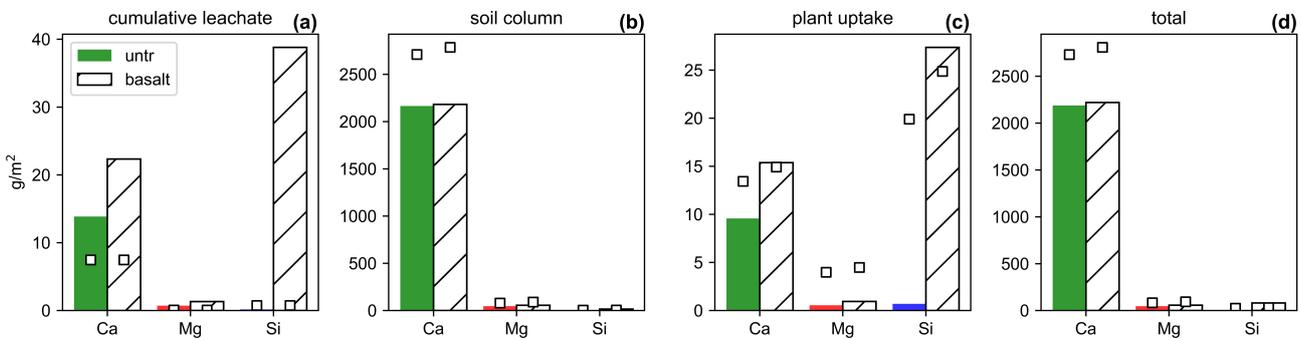
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**Figure S1.** Same as Fig. 2 in the main text with the results extended to 10 years.



**Figure S2.** Model-experiment comparison based on the down-flow bottle experiments by te Pas et al. (2023). (a) Cumulative alkalinity leached in time (solid = model, dashed = experiment). (b) Alkalinity on soil adsorption sites at the end of the experiment (symbols are experimental replicates). Note the different y-scales in panels a and b. (c) pH dynamics in time.



**Figure S3.** Model-experiment comparison of Ca, Mg, and Si partitioning between leachate (a), soil column (b), and plant (c). Note the different y-scales. Square symbols are the mesocosm experimental data by Kelland et al. (2020)