

List of relevant applied changes for Suitner et al. (2025), major revision Jan 2026:

Information about experimental setups from Hartmann et al. (2023) and Suitner et al. (2024) broadened, including a detailed description of each setup in the SI.

Diverse requested changes to the figures applied as stated in the author replies:

Fig. 3: initial values added

Fig. 4: legend moved and markers optimized

Fig. 8: New panels B (removing the particle size distribution from the main plot) and C (providing an image of some precipitates) added to Fig. 8, axes have been optimized. Aragonite density corrected.

Fig. 9: Reworked, as stated in the authors rely. A graph for an empirical rate equation combining the expected TA loss rate per m^2 with the PSA evolution and the determined rate constant (k) and reaction order (n) to show the resulting symmetries, tracing the measured TA-loss rates. The related text was adjusted accordingly.

Section 3.5: was reworked to adjust to the applied changes

Section 3.6: reworked to improve clarity

Section 4.5: Additional discussion about limitations, reason for high chosen TA perturbations, and influence of background particles provided

Diverse minor requested changes applied as stated in the authors rely letters.

Financial support of the Ocean Alk-Align project clarified.

No additional data were produced.

Supplement was reworked, please be aware that figure names changed, and additional figures were added as requested. Tables and figures for cross-comparison of treatments added. SEM-images optimized. Lengthy descriptions of the experimental setups and descriptions of outliers provided. Fig. S10 reworked in accordance to Fig. 9, see above.