



Supplement of

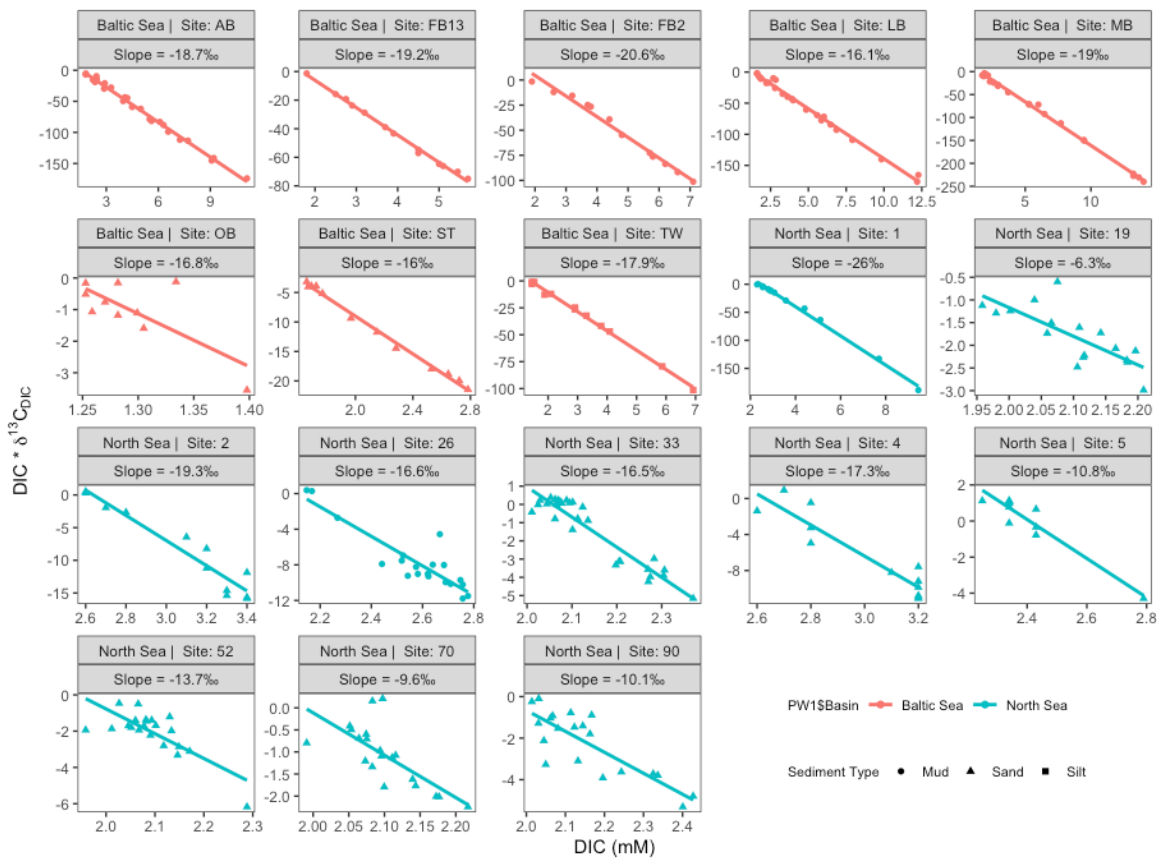
Benthic alkalinity fluxes from coastal sediments of the Baltic and North seas: comparing approaches and identifying knowledge gaps

Bryce Van Dam et al.

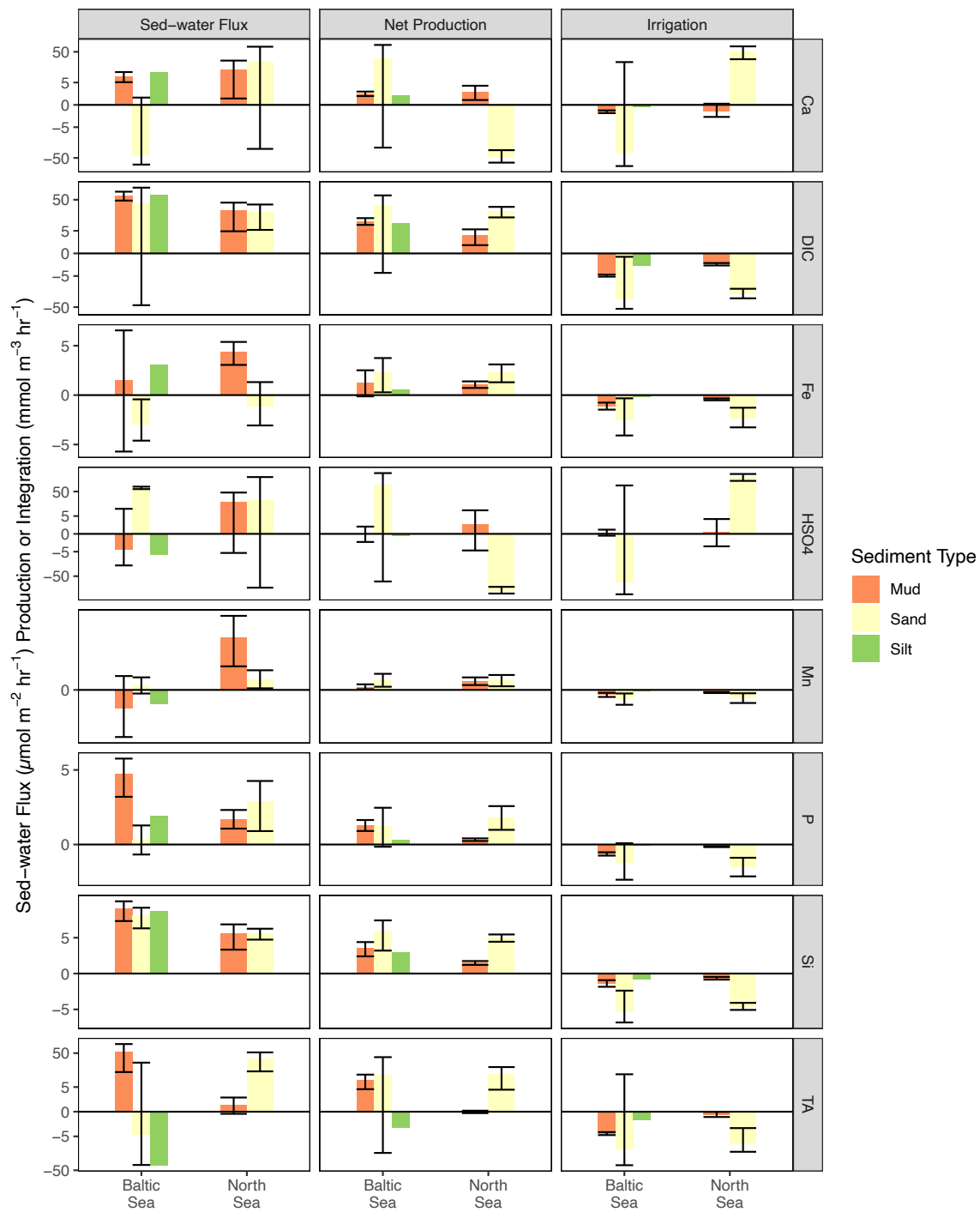
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Supplementary Figure S1. Miller-Tans plots of DIC * $\delta^{13}\text{C-DIC}$ (mM * ‰) vs DIC (mM)



Supplementary Figure S2. Net sediment-water fluxes ($\mu\text{mol m}^{-2} \text{hr}^{-1}$) and volumetric production and irrigation rates ($\text{mmol m}^{-3} \text{hr}^{-1}$) generated in PROFILE, presented for each sediment class, averaged across all sites in each basin.



Supplementary Table S1. Preservation techniques and measurement methods for each sampled parameter. Values denoted with an asterisk (*) were taken from Lipka 2017.

| Parameter | Preservation technique | Method | | Analytical Precision (%) | |
|-------------------------------|---|--|---------------|--------------------------|-----|
| | | HE541 | Other cruises | | |
| H ₂ S | Zn-acetate solution (5% (v/v)), freezing | Photometry | | -* | |
| Ca | Filtration (< 0.45 μm), acidification with HNO ₃ solution (65% (w/w)), cooling | ICP-MS/MS | ICP-OES | <5 | 2* |
| Fe | | | | | 6* |
| Mn | | | | | 6* |
| P | | | | | 7* |
| HSO ₄ ⁻ | | | | | 10* |
| DIC | HgCl ₂ solution (sat.), cooling | CF-irmMS | | 4* | |
| δ ¹³ C-DIC | | | | 2* | |
| TA | 0.1 N HCl, cooling | Potentiometric titration | | 2* | |
| NO ₃ ⁻ | freezing | Continuous flow analyzer (colorimetric analysis) | | 3 | |
| NH ₄ ⁺ | | | | 3 | |
| Si | cooling | | | | |