



Supplement of

Coupling numerical models of deltaic wetlands with AirSWOT, UAVSAR, and AVIRIS-NG remote sensing data

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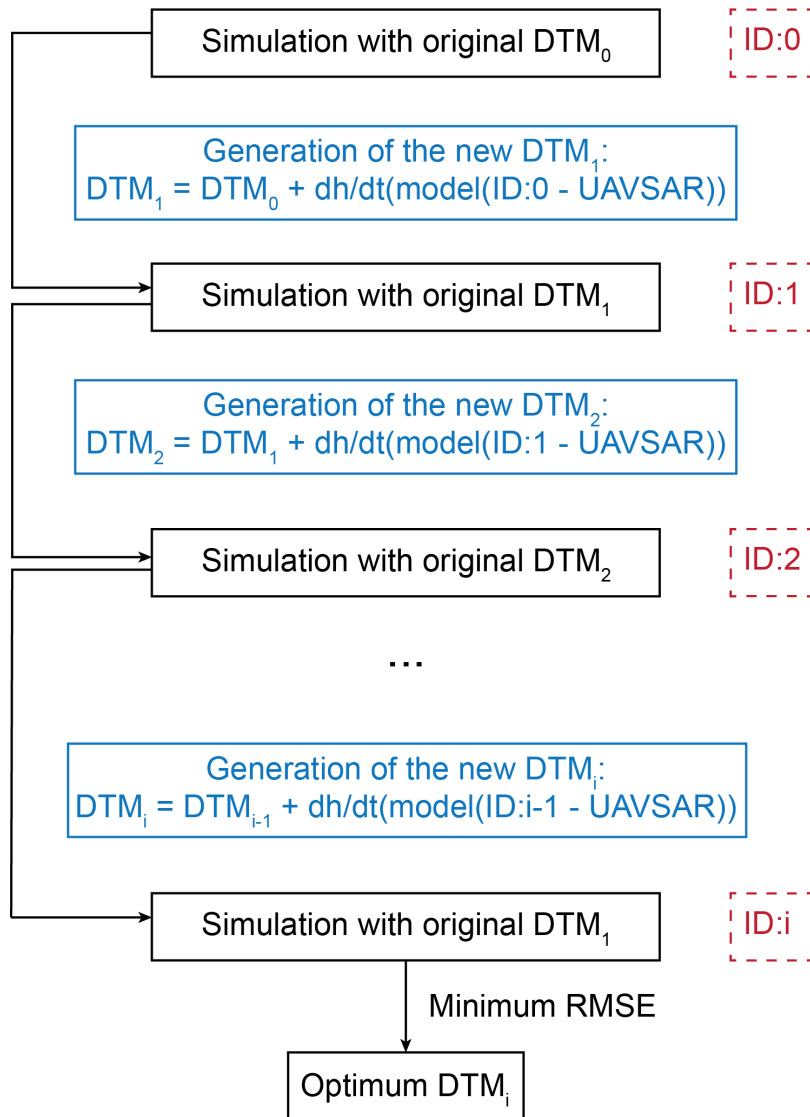


Figure S1. Flow diagram of the bathymetry calibration procedure using UAVSAR. The term dh/dt symbolizes the water level change. The figure is adapted from Figure 3 in Zhang et al. (2022a).

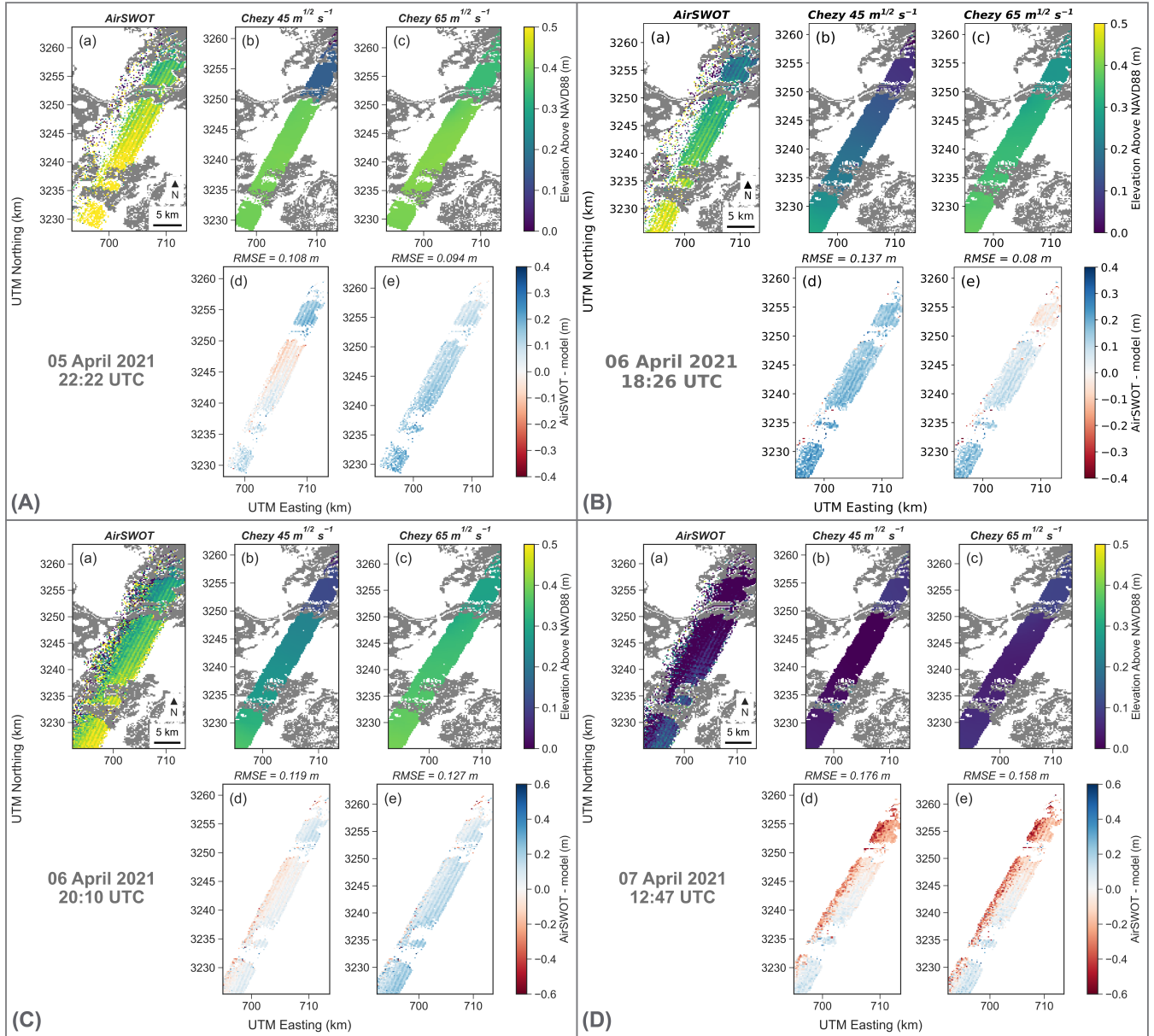


Figure S2. Comparison between AirSWOT and modelled water levels in 4 different times for the same flight line. In each panel, (a) is the measurements from AirSWOT, (b) and (c) the modelled water levels with friction coefficient of 45 and 65 $\text{m}^{1/2}\text{s}^{-1}$ respectively, (d) and (e) the errors in the 45 and 65 $\text{m}^{1/2}\text{s}^{-1}$ cases respectively.

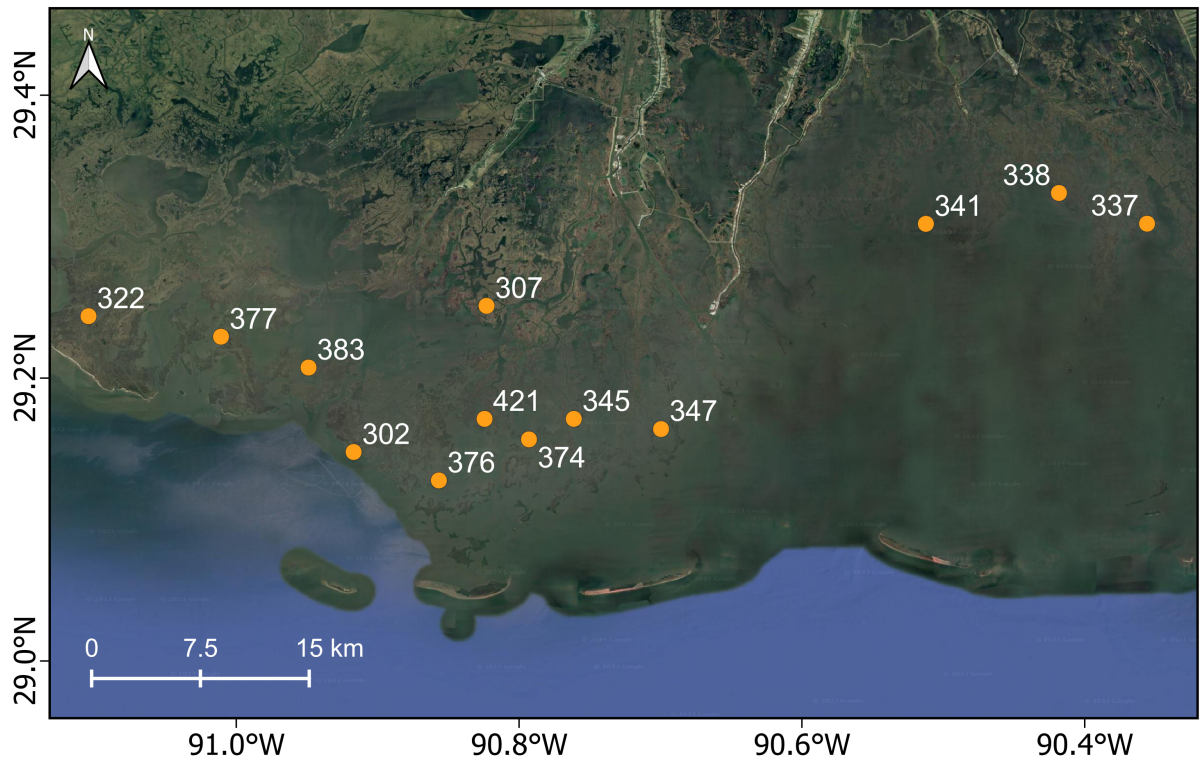
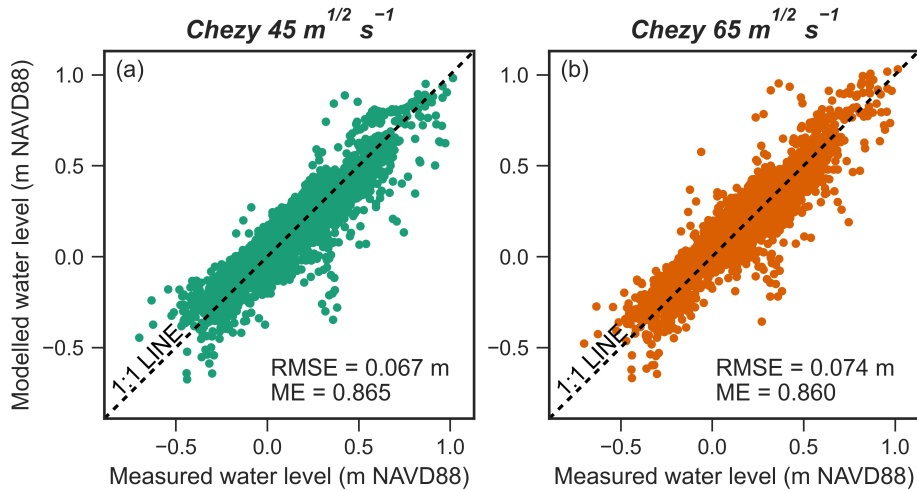


Figure S3. Location of the CRMS stations used in the separate calibration using only in-situ measurements. The same stations are use for the comparison of the two calibrations. Basemap credit: ©Google Satellite.

Calibration with in-situ measurements (Delta-X Spring 2021 campaign)



Validation with in-situ measurements (Delta-X Fall 2021 campaign)

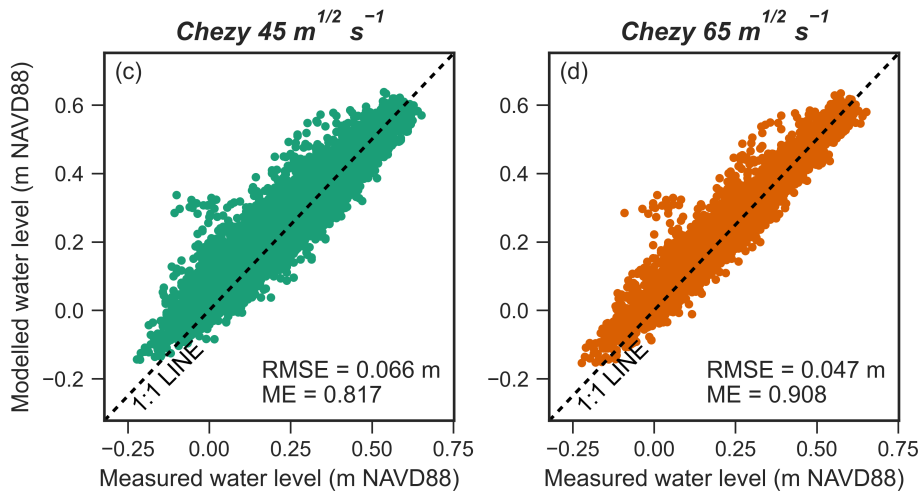


Figure S4. Calibration and validation of the water levels using in-situ measurements. The first row shows the water levels comparison for the calibration period during the Delta-X Spring 2021 campaign. The second row shows the water levels during the Delta-X Fall 2021 campaign.

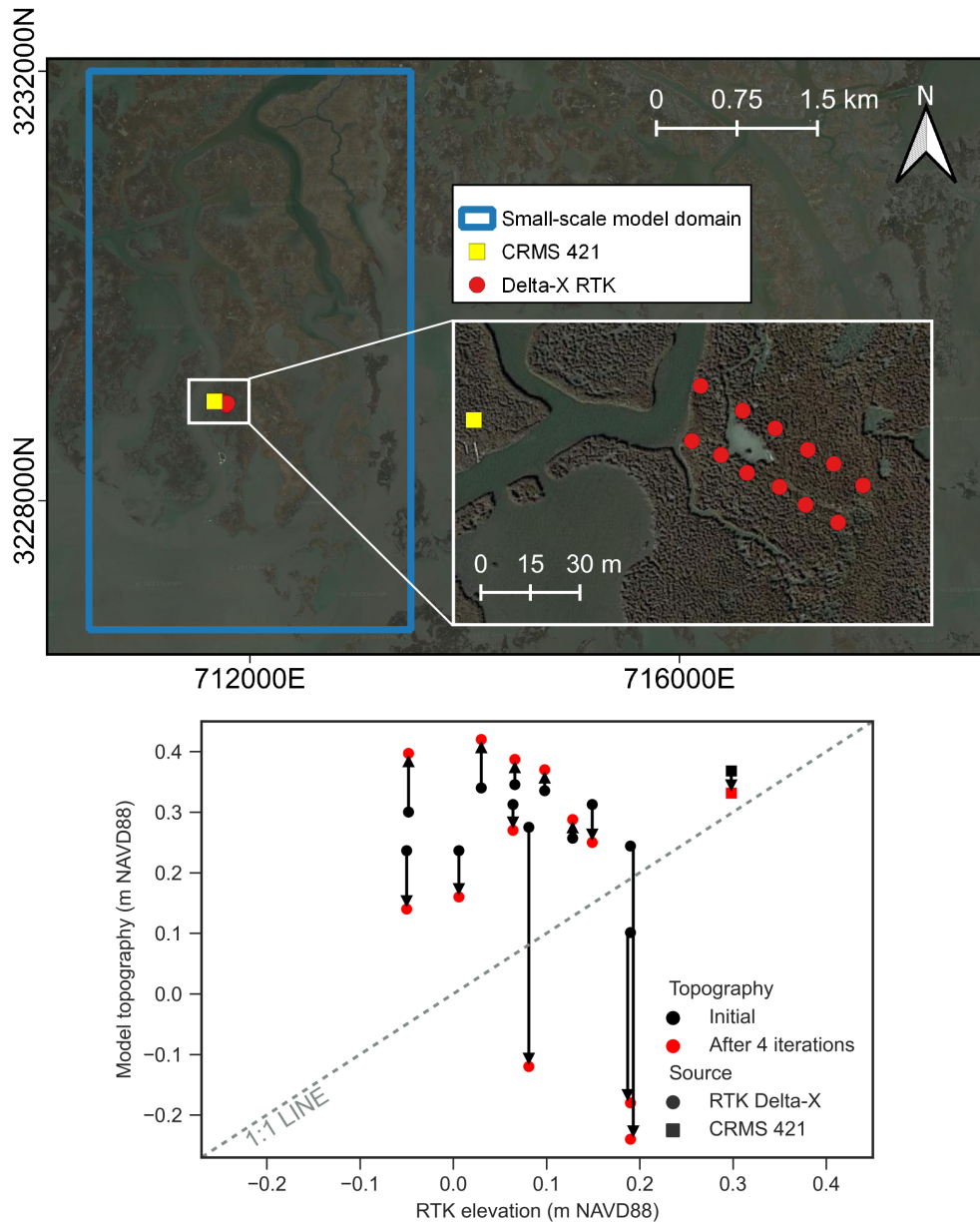


Figure S5. Validation of the topographic correction. The map at the top shows the location of the in-situ elevation measurements inside the small-scale model domain. The bottom plot shows if the correction based on UAVSAR was able to improve the elevation. Basemap credit: ©Google Satellite.

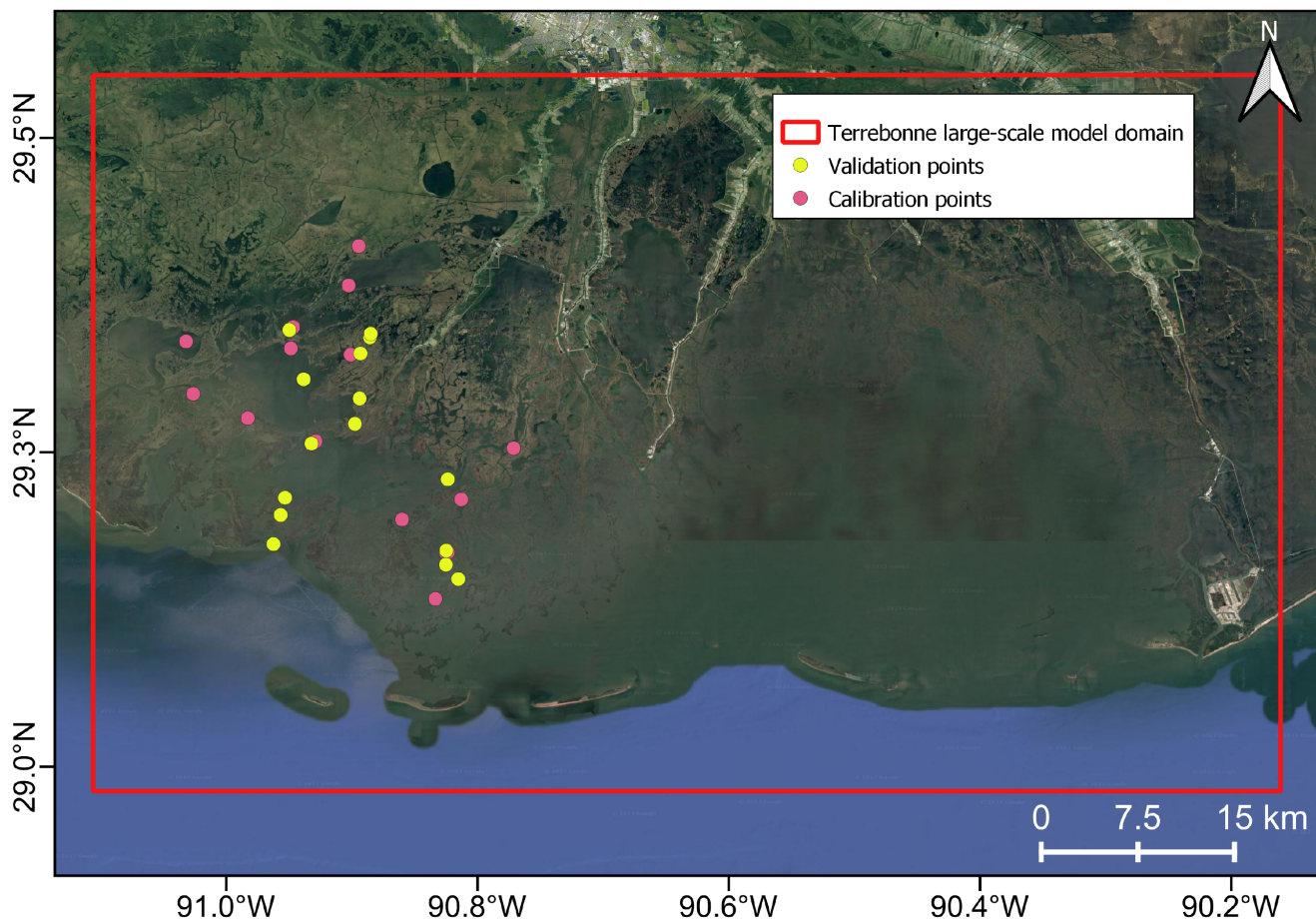


Figure S6. Location of the TSS samples used for the sediment parameter calibration and validation with in-situ measurements. The red rectangle shows the Terrebonne large-scale model boundaries. Basemap credit: ©Google Satellite.

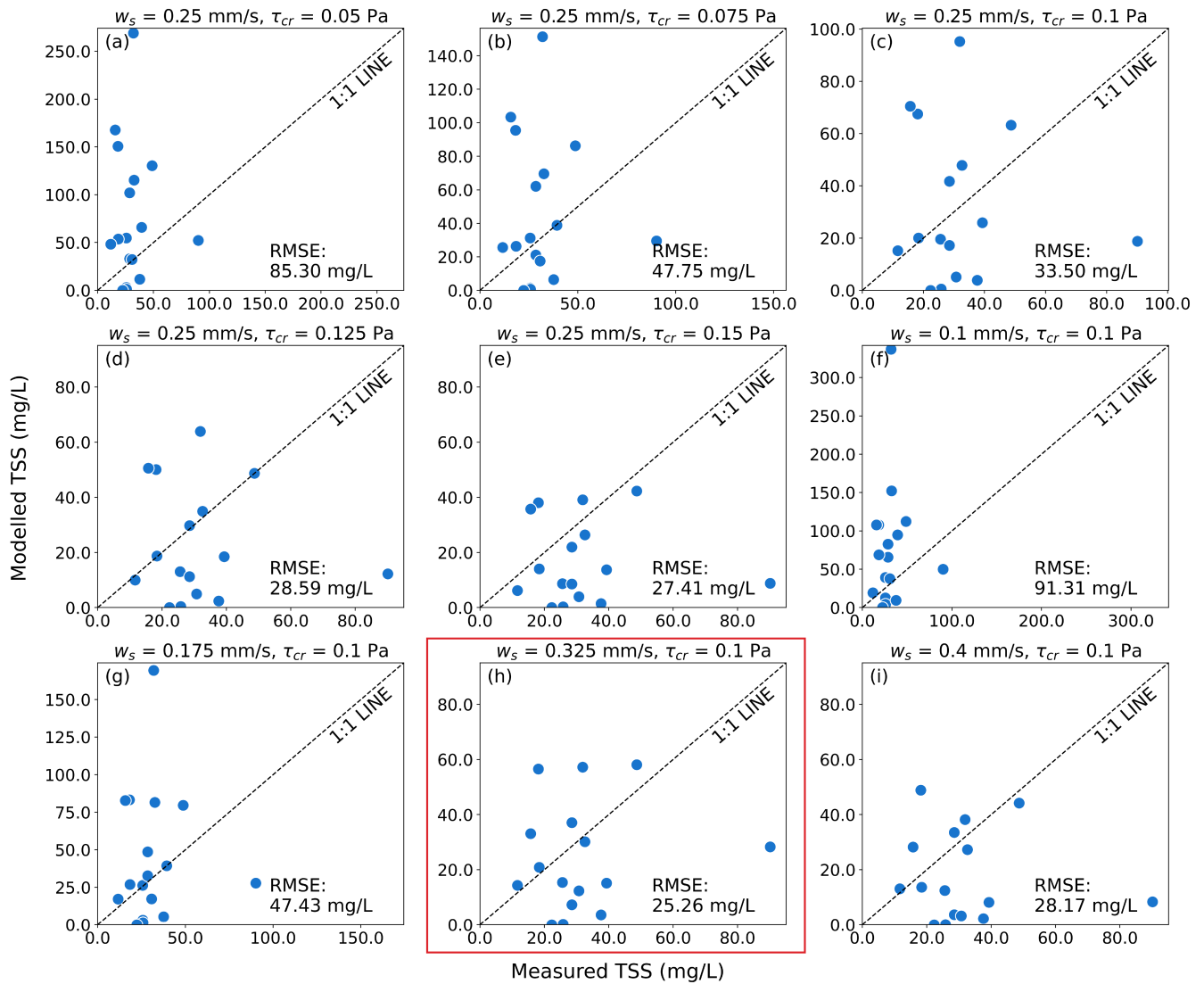


Figure S7. Comparison between in-situ measurements and modelled sediment concentration in the calibration of the sediment transport. Data were collected during the Delta-X Spring 2021 campaign. The red rectangle indicates the best case.

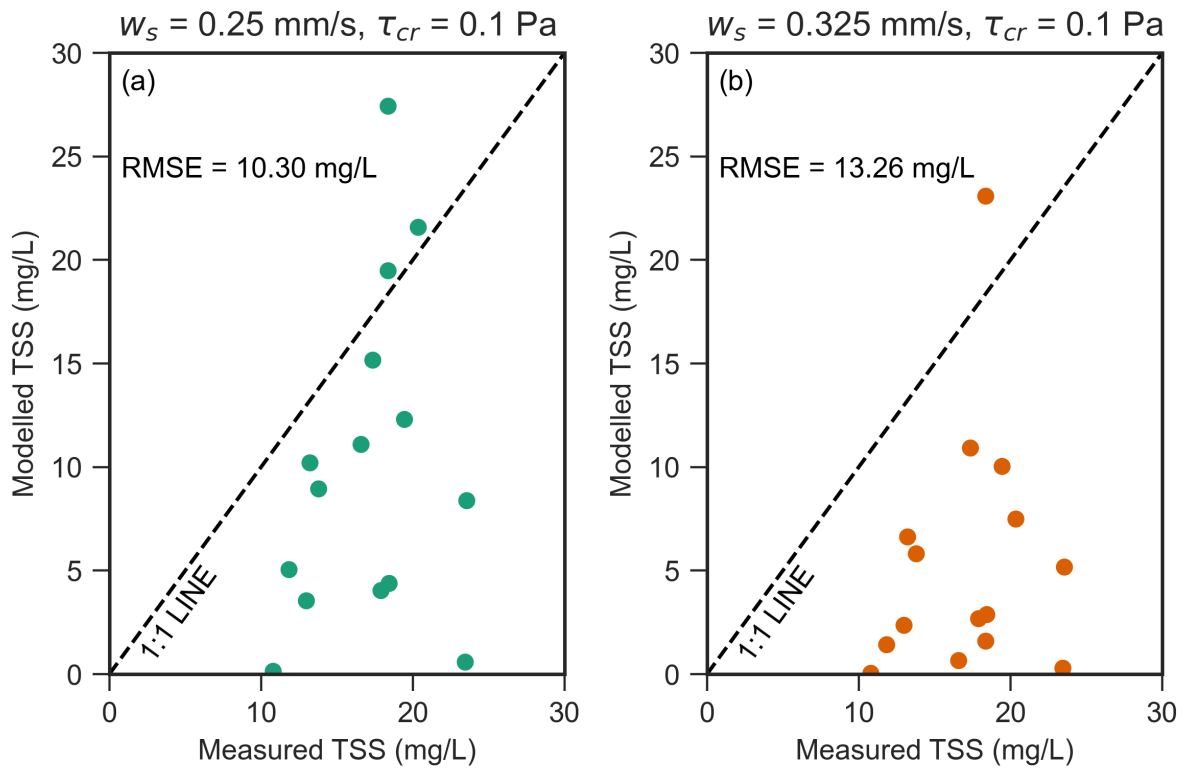


Figure S8. Comparison between in-situ measurements and modelled sediment concentration in the calibration of the sediment transport. Data were collected during the Delta-X Fall 2021 campaign.