**Supplementary Material**

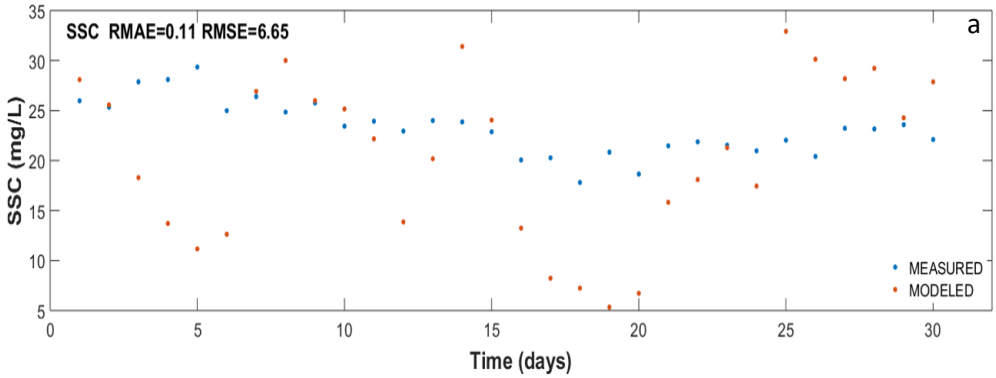


**Figure S1**. Calibration of the SSC in the Guaíba River. Comparison between SSCs (red dots) and measured data (blue dots) between January 30th and February 28th, 2013.

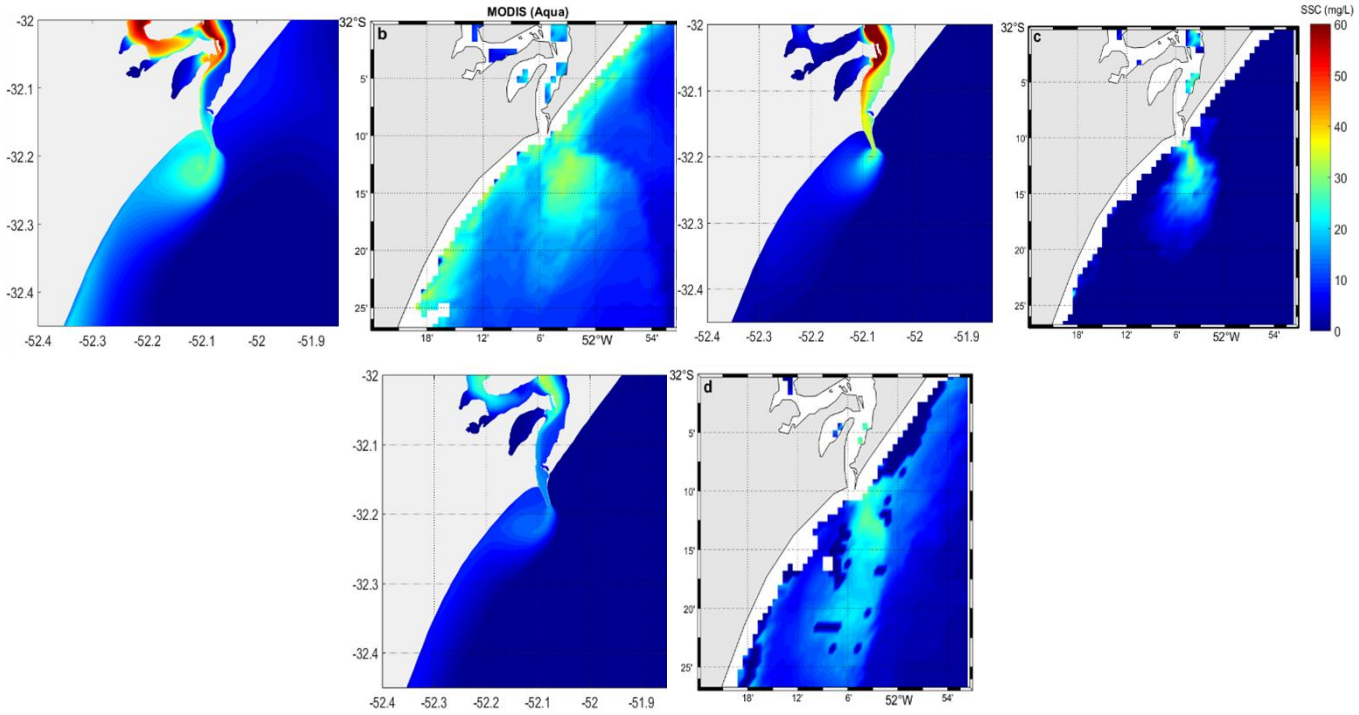


**Figure S2**. Suspended sediment concentrations (SSCs) on the surface calculated by the numerical model (on the left) and by remote sensing (on the right) for (a) August 19th, 2013, (b) December 18th, 2013, and (c) February 18th, 2014. The colour scale represents the SSC in mg/l.

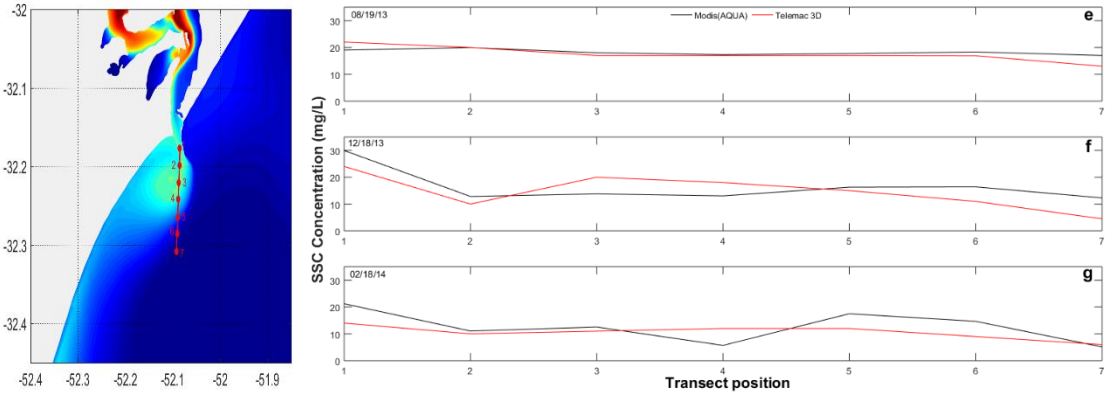


**Figure S3**. Comparison of SSC values calculated by the numerical model (red line) and measured by remote sensing (MODIS-Aqua) (blue line) for (a) August 19th, 2013, (b) December 18th, 2013, and (c) February 18th, 2014.

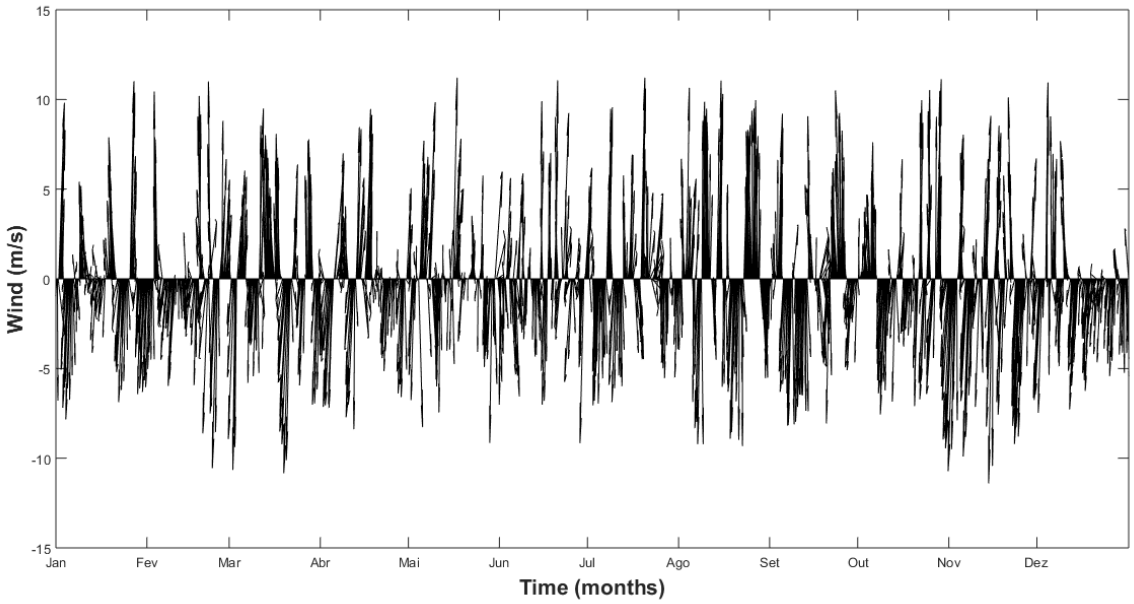


**Figure S4**. Wind intensity (m/s) and direction during the simulation period (2013 year). Positive values represent southerly winds, and negative values represent northerly winds.