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## Supplement of

## Parameterization of biogeochemical sediment-water fluxes using in-situ measurements and a steady-state diagenetic model

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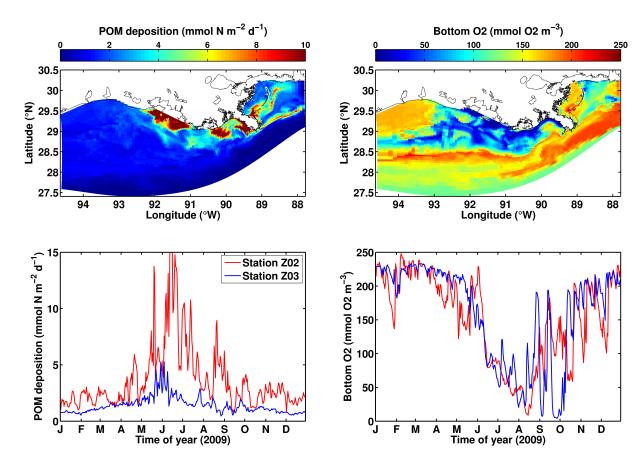


Figure S1. Spatial (top) and temporal (bottom) POM depositional flux and bottom water O<sub>2</sub> concentration in the biogeochemical circulation model. The upper panels represent a snapshot of bottom water conditions on July 20<sup>th</sup>, 2009. This dataset is used to force the diagenetic model in the meta-modeling procedure (Section 2.2) and to compare the meta-model and H&D parameterizations (Figure S2).

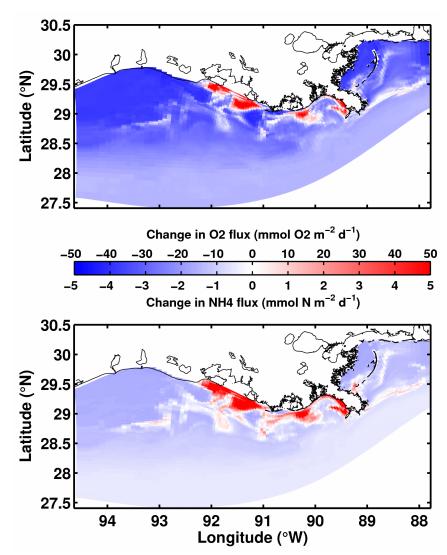


Figure S2. Difference between parameterized oxygen (top panel) and ammonium (bottom panel) fluxes during the LUMCON cruise in 2009 and fluxes simulated with the H&D parameterization.