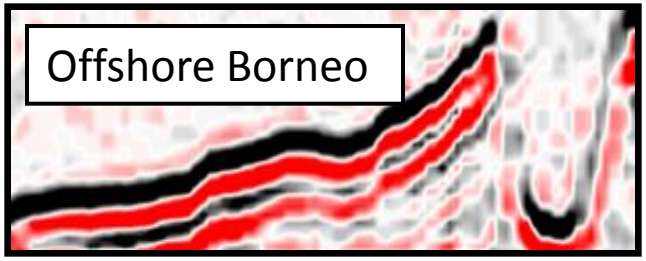
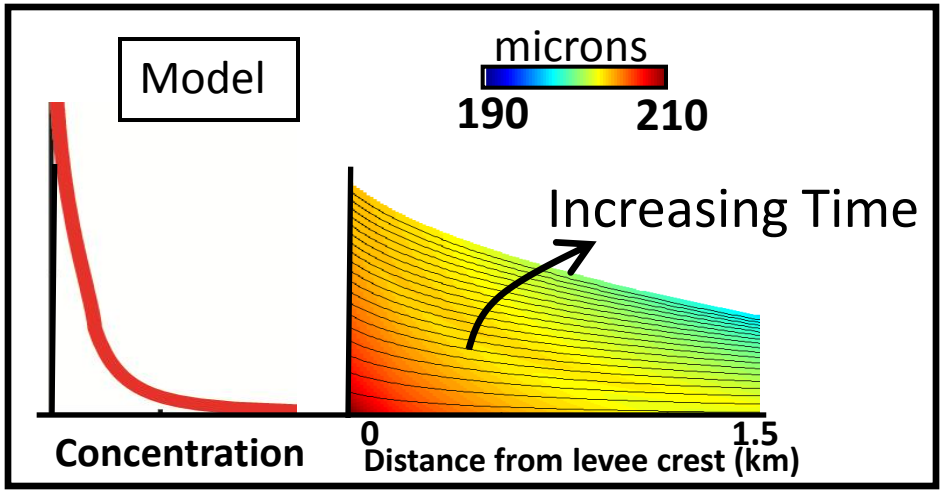
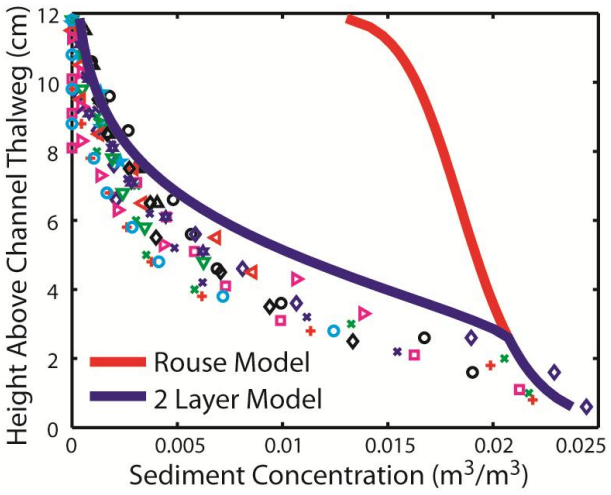
Quantifying the morphology and composition of thin-bed levee deposits in deep-water settings: Kyle Straub, Department of Earth and Environmental Sciences, Tulane University





Levees are the primary elements of self-formed submarine channels, yet in comparison to channel thalwegs little is known about their morphodynamics. The primary objective of this project is to improve our ability to invert levee morphology for deposit composition (net-to-gross) in a range of deep-water environments. We are utilizing laboratory experiments and 3D seismic data to develop levee morphodynamic models that link the evolution of levee stratigraphy to turbidity current flow properties.



Wall Region

$$C_z = C_a\left(\frac{H-z}{z}\left(\frac{z_a}{H-z_a}\right)\right)^p$$

$$p = \frac{w_s}{ku*}$$

Rouse, 1954

Jet Region

$$C_z = C_m \exp\left[-\beta_c\left(\frac{z-z_m}{H-z_m}\right)^{\lambda_c}\right]$$

Altinakar et al., 1996