General Experiment Meta data

Experiment Name: TDB-10-1

Experimental Facility: Tulane Delta Basin – This basin has approximate dimensions of 0.65 m deep, 4.2 m long, and 2.8 m wide. Depth of basin is great enough to conduct experiments focused on delta construction under conditions of varying base-level. Millimeter resolution of base-level is controlled via a motorized weir in hydraulic communication with basin, while sediment is delivered to the basin via an AccuFeed Vibra Screw: model HVF56E17F1005 G. Base-level, sediment feed, and water feed to the basin are controlled through a computer interface. Topography is collected with a system of sheet lasers and oblique photographs from which true topography calculated.

Dates Run: 3/18/2010 – 7/1/2010

Primary individual responsible for experiment: Yinan Wang Kyle Straub, Jennifer Kuykendall

Secondary support for experiment: Kyle Straub, Jennifer Kuykendall

Purpose of Experiment: Explore compensational filling and stratigraphic completeness of a delta experiencing constant boundary conditions

Boundary Conditions:

Total Run Hours: 100 hrs

Water Supply: 0.451 L/s

Sediment Supply: 0.011 L/s

Ocean Level Change: 5 mm/hr

Dye (Including Frequency): continuous feed

Sediment Description: 70 % by volume WF-1 silica with D50 ~ 110 mm, 29% Crushed Coal (Anthrafilt) with ~D50 of 400 mm, 1% Titanium Dioxide

Sediment Supplier(s) WF-1 silica from US Silica, Titanium Dioxide from George C. Brandt, Inc., Crushed Coal from Carbon Sales, Inc. (located in Wilkes-Barre, PA tele: 800.233.8355)

Photograph Meta Data

Photo angle of raw image: At 45 degree angle +/- 10 degrees

Frequency of Capture: 1 image every 1 minute

Timing: At start over every 1 minute

Processed Photos

Method: Photogrammetry

Final Resolution: Varied as deposit surface increased in elevation, but averages 1.28

mm/pixel

Topographic Meta Data

Method of Collection (including whether 2D or 3D): Photogrammetry on images of sheet lasers – 2D

Spatial Coverage: Strike sections at 1.63, 2.13, and 2.63 m from proximal basin wall

Resolution: Vertical and lateral resolution of 1 mm

Frequency of collection: once every 2 minutes

Other:

Stratigraphic Cuts Meta Data

Location of Images: Strike sections at 1.63, 2.13, and 2.63 m from proximal basin wall

Resolution: 5.3 pixels/mm

Method of sectioning: vertical cuts through moist deposit with basin empty of water

Other: