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## **CHANNEL DEPOSITS IN A SUBMARINE TURBIDITY CURRENT EXPERIMENT**

We report on an experiment on turbidity currents in a subsiding basin. The experiment was performed to study deposition of sediment from turbidity currents in a subsiding basin modeling diapiric mini-basins on the Gulf of Mexico continental slope. The subsiding experimental EarthScape facility (XES or Jurassic Tank) at Saint Anthony Falls Laboratory, University of Minnesota was used. Turbidity current events varied in size and duration. Continuous events lasted 36 minutes with discharges of 1.5 liters/s, small pulse currents lasted almost 2 minutes with discharges of 1.5 liters/s and large pulses lasted almost 4 minutes with discharges of 4.5 liters/s. A series of these event types were produced in two stages. In Stage 1 turbidity currents were introduced while the basin underwent spatially varying (bowl-shaped) but temporally constant subsidence. The total accommodation space created in Stage 1 matched the total volume input of sediment. In Stage 2 the same sequence of flows was run, but without subsidence. Sediment in the currents was silica flour of three calibers (120 micron, 40 micron and 20 micron). Sea level was held constant.

Short channel-like structures were identified with surface scanning-sonar during Stage 1. The existence of the channels was later confirmed by means of stratigraphy observed in deposit slices. These channels had lengths on the order of a meter, displayed levee-type structures with relief up to 10 centimeters and lasted through eight flow events. Channels and other deposit features are described with both data from sonar scans and photographs of the deposit.