

- 1) Write out the equation for Relative Sea Level and explain its components and their effect on relative sea level change.
- 2) Explain how backwater in rivers relates to avulsion, compensational stacking, and delta parasequences.

Due: Wed, Feb 22, 10 AM

2) Explain how backwater in rivers relates to avulsion, compensational stacking, and delta parasequences.

Backwater in river deltas occur at about the location where a river's bed goes below the water level of the receiving basin. This causes a large reduction in water surface slope and sediment transport. Because this makes a large negative sediment transport gradient, it causes deposition of sediment that aggrades the channel locally resulting in avulsion. When a channel avulses on a delta, its new path will occupy the shortest path to open water, or equivalently the path with lowest topography. Each time the channel avulses it builds a new delta lobe that fills in the low spots between previously deposited delta lobes. This stacking pattern is known as compensational stacking. It is a collection of sediments created by successive delta lobes that coarsen upward and are called deltaic parasequences.