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Time- and Length-series analysis within artificial deltas

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The internal structure of natural deltaic systems can be analysed through interpretation of vertical logs and seismic sections. If we are to quantitatively investigate the correlation between the internal structures of a delta and the factors influencing them, we should start with simple-case examples. We expect that the complexity of natural deltas be at least as complex as that of artificial deltas.
The different deltaic structures exist within a physical space and thus have a length component to them. The factors that influence the formation of these structures, such as sea level change and tectonic subsidence, exist within the domain of time. Sedimentologists regularly compare these influencing factors with the structures they observe within sedimentary logs and seismic cross sections, and attribute physical changes to certain signal changes within the time domain. The implication of this being constant and homogenous sedimentation throughout the entirety of the delta.
We notice from artificial deltas that this is not the case. Sedimentation is discontinuous and localized to certain regions of the delta at different times. This creates periods of deposition that are not seen throughout the delta that result in a hiatus within the sedimentary history of the delta at a given location.
For correlation between different dimensions ,time and space, to be considered, we must construct a True-Time series from the evolution of the artificial deltas and compare it to the Time-series control factors and quantify the misfit to give an error range.
From this error range we can more accurately conclude comparisons between influencing factors and the internal structure of artificial deltas can be made.

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