Sedimentation of the Neogene Deep-water Section in the Campos Basin, Offshore Brazil.

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The Campos Basin, located offshore Rio de Janeiro State, was a depositional site of a thick deep-water sedimentary section on the continental slope and basin during the Neogene.
In the Campos Basin the cycle boundaries are the key elements of sequence stratigraphy which can be identified in seismic sections by conventional seismostratigraphy methods, well log correlation and biostratigraphy. Several third-order unconformity events were identified in the studied interval. Despite the correspondence of cycle boundaries with the global eustatic lowering, the sequence stratigraphy model does not explain the sequence pattern observed in Campos Basin. This holds true especially with regard to the nature of deep-water sigmoidal wedges and some erosional unconformities associated with them.
The Miocene sigmoid sets overlap a basal sandy interval interpreted as a mixed deep-water system. This comprises a pile of sedimentary rocks originated by gravitational flow and bottom current reworking processes during the late Oligocene and early Miocene. The deep water sandstone facies range from conglomerate to sandy mudstone deposited as gravitational mass-flows. They have been interpreted as debris flows, high-density turbidity flows, and less commonly graded, fine-grained sediments formed by low-density turbidity flows. Bottom current reworking facies are mainly represented by fine-grained sediments that normally present traction structures or intense bioturbation. The hemipelagite and bioturbated sandy-silty mudstone facies are the main constituents of deep-water sigmoidal wedges.