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Subsidence history of the eastern Northern South Yellow Sea Basin, offshore Korea

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The Northern South Yellow Sea Basin (NSYSB) is located between East China and West Korea, and is one of the basins in eastern Asia where rifting started in the late Mesozoic time, caused by large-scale interaction between the Pacific, Eurasian, and Indian plates. To analyze the detailed tectonic evolution of this basin, this study focuses on backstripping the subsidence history of four representative structures selected in the basin. This paper examines sag and half-graben structures in the Central Sub-basin as well as half-graben and graben structures in the SW Sub-basin. By sedimentary backstripping, the subsidence history of the eastern NSYSB can be grouped into a main subsidence phase in the Late Cretaceous - Oligocene and a secondary subsidence phase in the Middle Miocene – present. Both subsidence phases are separated by the uplift and erosion phase during Early Miocene times. The main subsidence phase itself consists of a rapid subsidence in the Late Cretaceous - Paleocene and a slow subsidence phases in the Eocene - Oligocene. These subsidence phases of this basin can be correlated to MSQ I, II and III identified in the SW Sub-basin with seismic stratigraphy, and can further be related to the convergence movement of Pacific–Eurasia and Indian–Eurasia plates.