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Classification of rifted sedimentary basins according to their structural genesis and evolutionary history.

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We develop the concept that sedimentary basins can be classified according to their structural genesis and evolutionary history.

Basins can be classified according to the so called “basin building blocks” they contain. This building block approach helps to understand the basin evolution and allows a comparison of basins. The building blocks for basin history are (1) basin-forming tectonics, (2) depositional cycles or sequences, and (3) basin-modifying tectonics.

The concept presented here is designed to link common elements of petroleum systems and plays to natural stages in basin evolution.

This concept is constructed through several steps. These steps are (1) to identify standard evolution patterns related to geodynamic drivers, (2) to group basins with similar tectonostratigraphic evolution, (3) to relate basin trap types to basin history and (4) to calculate hydrocarbon maturation zones.

Basins with similar subsidence history in the same tectonic region appear to have experienced the same modifying tectonics and have similar trap types with a characteristic hydrocarbon maturation history.

Keywords: petroleum systems, plays