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Sediment accumulation history in the Mozambique passive margin basin and kinematics of the South African Plateau uplift during Meso-Cenozoic time

Aymen Said (1), Christoph Moder (1), Stuart Clark (1), and Jakob Skogseid (2)

(1) Computational Geoscience Department, Simula Research Laboratory, Fornebu 1364, Norway, (2) Statoil AS, Forusbeen 50, Stavanger 4035, Norway

The kinematic history of the South African (Kalahari) Plateau uplift during Meso-Cenozoic time is not well understood. Quantifying the terrigeneous sediment budget in its surrounding passive margin basins using a source to sink approach helps to figure out the evolution of this continental relief. In this study, we use data from 43 wells drilled in the Mozambique passive margin basin to estimate the volume of sediments preserved for each time interval, and corrected for in situ production and for remaining porosity. Results show two periods of high accumulation rates. The first is recorded during Mid-Late Cretaceous and is well described in similar studies in the Namibia and South Africa margins, which supports a major uplift of the whole Kalahari Plateau in the Mid-Late Cretaceous. The second high accumulation rate is recorded during the Miocene and is consistent with a relief reorganization driven by uplift during that period at least in the Eastern rim of the Kalahari Plateau feeding the Mozambique passive margin basin.