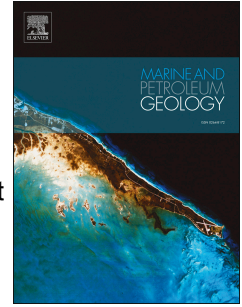


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A Mid-Miocene erosional unconformity from the Durban Basin, SE African margin: A combination of global eustatic sea level change, epeirogenic uplift, and ocean current initiation

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4

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11

12 **Abstract**

13 Erosional unconformity surfaces are key indicators for variations in eustatic sea level, ocean
14 dynamics and climatic conditions which significantly affect depositional environments of
15 sedimentary successions. Using a dense grid of 2D seismic data, we present new evidence
16 from a frontier basin, the offshore Durban Basin, east coast South Africa, of a mid-Miocene
17 age erosional unconformity that can be correlated with analogous horizons around the entire
18 southern African continental margin.

19

20 Submarine canyon incision of a mixed carbonate-siliciclastic wedge and ramp margin typifies
21 the mid-Miocene unconformity in the Durban Basin. Epeirogenic uplift of southern Africa
22 characterised this period, with erosion and sediment bypass offshore with concomitant
23 increases in offshore sedimentation rates. Although epeirogenic uplift appears to be the
24 dominant mechanism affecting formation of the identified sequence boundary, it is postulated
25 that an interplay between global eustatic sea level fall, expansion of the east Antarctic ice

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