

Structural control of kimberlitic intrusions in Angola

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Pangea's breaking cause the individualisation of African continent and his megafracturing which led to the formation of crustal megablocks: Western, Arabic-Nubic and Austral.

Since the Albian, the opening of the South Atlantic, develops an intense W-E extension process over the Austral block, which include the Congo and Kalahari cratons. This extension cause the tectonic reactivation of fragile weakness zones inherited from the Precambrian belts around those cratons and inside them. The reactivation begins with the Cape Orogeny (Permo-Triassic) and remains throughout the episode of South Atlantic opening. In the Congo craton the main weakness zones have ENE-WSW, NNW-SSE and NNE-SSW directions.

Some of these zones have been described in Angola relating the fault bounded structures and the distribution of kimberlitic magmatism. The Volcanic Belt of Angola develops from NE to SW along 1300 km. This structure is a paradigmatic example of magmatism evolution from kimberlites with diamonds to carbonatites, passing trough sterile kimberlites with carbonatites.

However a conjugate NNW-SSE structure marked by the rivers Cuango e Cuando, could be the main structural trap for the kimberlites emplacement as shown by the richest secondary deposits along the Cuango river.