

P15

## Gravity Modeling of the Southern Madagascar Plateau

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### Summary

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The morphology and structure of the Madagascar Plateau must be seen in the context of the geological history of the basins surrounding the Plateau. Pangea the super continent formed with the assembly of Eurasia, Europa, America, Gondwana, began to break up in Permian / lower Triassic followed by continental rifting of the south part of the Pangea and the expansion of the adjacent oceanic plate in the middle Jurassic.

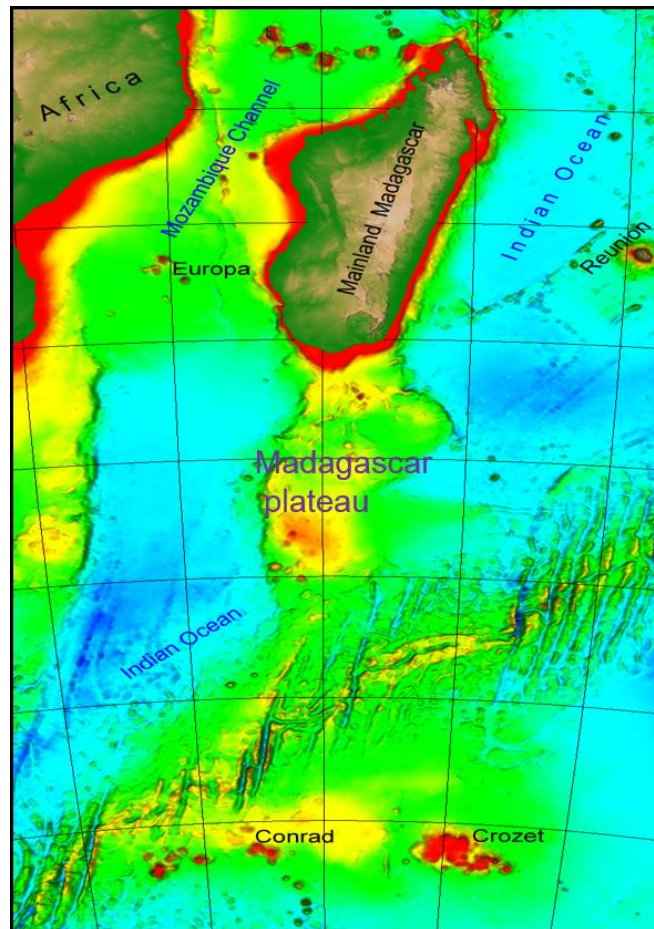
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Gravity data over the Madagascar Plateau (MP) is reinterpreted for attributing the unicity of this plateau i.e. all identified formations are continuous from North to South. Gravity values are varying between -60 to 80mGal. The modeling of the crustal structure is based on the density and the use of the Geosoft software focused on the Talwani algorithm for the calculation of the anomaly.

Using the available gravity data the crust is modeled along three profiles as a four-layered unit.

The resulted model supports a consolidated sediment layer and a mantle having respectively the density of 2.65 and 3.4 g/cc.



**Figure 1** Map location of south West Indian Ocean and the Madagascar plateau.