

## **Detrital zircon provenance variations within a large Cretaceous aeolian system, Botucatu Fm.-Brazil**

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Aeolian sand seas are largely considered to homogenise provenance signatures through intense reworking of detrital material [1]. Here we investigate the northern margin of the Cretaceous Botucatu Formation (Paraná Basin, Central Brazil) with the aim of studying detrital zircon (DZ) provenance. Samples were taken throughout the stratigraphy, including the sandstones interbedded in volcanic rocks at desert top. Cambrian to Neoproterozoic ages (C-Np) (520-750Ma) are the major contribution, with Tonian to Stenian ages (T-S) (0.9 to 1.2Ga) and Orosirian to Rhyacian ages (O-R) (1.9 to 2.3Ga) occurring as subordinate inputs. There is a slight upward variation across all the northern margin (1000 km long), with a widespread decrease in T-S ages from 20% at the base to 11% in the interbedded sandstones, and local increase in C-Np ages (from 39 to 49%) in the northeastern part and in O-R ages (from 10 to 17%) in the northwestern part. The northern margin of the Botucatu Desert have a relatively homogenous DZ signature, but the upward variation, despite the continuous wind regime towards the South [2], illustrates a progressive change in sediment sources. The changes observed in the upper part of the formation correspond probably to an increase in proximal sources contribution, possibly coming from the Ribeira Belt (C-Np ages) and from the Amazon Craton (O-R ages), suggesting a transition from intrabasinal to extrabasinal input.

[1] Muhs (2004) *Geomorphology* **59**, 247-269.

[2] Scherer *et al.* (2007), *PPP* **250**, 89-100.