Supplementary Material: Global plate model choice impacts reconstructions of the latitudinal biodiversity gradient

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# Supplementary Text

**Details about the Global Plate Models used in this study.**

Here, we test the sensitivity of deep-time Latitudinal Biodiversity Gradient (LBG) reconstructions to the use of different Global Plate Models (GPMs).

GPMs use the Euler Rotation Theorem to reconstruct the motion of tectonic plates on a sphere-like structure–the Earth. Based on a compilation of geological data (see [1] for an extensive review), a GPM divides tectonic plates into smaller sub-units that will move relatively to each other in a hierarchical way. It therefore takes two main inputs: (1) a set of tectonic elements and (2) a tree-like structured framework in which these elements moved throughout the geological times, called reference frame [1–3]. Two classes of GPMs exist. ‘Continental-drift’ models are modelling the motion of present-day continental sub-units by treating them as static sub-units [e.g. 4,5], whereas ‘full-plates’ model describing in detail how plate borders have evolved through geological times [6,7].

We chose three mantle reference frame models, as better-suited for reconstructing palaeolatitudes than other reference frames (see [1]).

# References

# Supplementary Tables

# Supplementary Figures