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## Tracking dynamic topography through hiatus surfaces

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The planform is a defining feature of mantle convection and it can be gleaned from the stratigraphic record by mapping the continent-scale sediment distribution. Positive and negative surface deflections induced by mantle convection (dynamic topography) imprint the stratigraphic record at inter-regional scales. Dynamically uplifted continental regions create erosional/non-depositional environments which lead to gaps in the stratigraphic record, known as sedimentary hiatuses. Contrarily, subsided regions result in continuous sedimentation.

We use continental- and country-scale digital geological maps, regional geological maps, online geological databases, correlation charts, drill logs and regional stratigraphic studies, at a temporal resolution of geological series (ten to tens of millions of years) to map these events through geological time. This results in the hiatus maps---a proxy for the interregional patterns of uplift and subsidence associated with dynamic topography.

We carry this out for all continents apart from Antarctica for eight geological series since the Upper Jurassic and obtain a proxy for dynamic topography for each geological series. We study the temporal and spatial changes of the hiatus surfaces, their correlation with flood basalts eruptions, and the effects of sea-level variation in the resulting maps. Moreover, we also study the manual and digital approaches employed in the mapping of these hiatus surfaces.