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**African Cenozoic Sedimentary Flux from Modelling of Drainage Networks**

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The history of uplift of the Earth's surface is a response to tectonic and sub-plate processes. Similarly, this history of uplift is a major control on the spatio-temporal distribution of erosion, and hence sediment supply to Earth's major basins. We invert drainage networks in Africa for a history of uplift using a simplified formulation of the well-known stream power law [1]. We find it is possible to fit continental drainage patterns and calculate a reliable uplift history. Our calculated uplift history is compatible with independent geological observations of uplift (e.g. radiometric dating of marine terraces) and denudation (e.g. low-temperature thermochronometry). Results indicate that Africa's domal swells (e.g. Hoggar, Tibesti, Bie, Afar) were uplifted diachronously since ~35 Ma. We use our results to calculate predicted sediment flux histories to Africa's major deltas, which compare favourably to published observations. Regional magmatism, tomographic and gravity data indicate that African topography is partly supported by the mantle. Our history of uplift indicates that its dynamic (i.e. convective) support has varied during Cenozoic times.

*References:*

[1] Rudge et al. (2015) J. Geophys. Res.: Earth Surface 120(5): 894-914.

