



## **Evolving Sediment Flux to the Nankai Trough; influence of the Yangtze River?**

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The Nankai accretionary complex is the most recent addition to the accretionary complexes of southwest Japan and has preserved a record of sediment flux to the trench during its construction. In this study we used U-Pb zircon and fission track analysis of both zircons and apatites from sediments taken from the forearc and trench of the Nankai Trough, as well as rivers from southwest Japan to examine the exhumation history of the margin since the Middle Miocene. Modern rivers show a flux dominated by erosion of the Mesozoic-Eocene Shimanto and Sanbagawa accretionary complexes. Only the Fuji River, draining the collision zone between the Izu and Honshu arcs, is unique in showing much faster exhumation. Sediment from the source is not found 350–500 km along the margin offshore Kyushu indicating limited along strike sediment transport. Sediment deposited since 2 Ma shares the dominant source in the Shimanto and Sanbagawa Complexes seen in the modern rivers. Prior to 5 Ma additional sediment was being sourced from further north in more slowly exhumed terrains. Around 9.4 Ma U-Pb zircon ages indicate enhanced erosion from North China craton basement, exposed in northern Honshu. In the middle Miocene, at ~13.4 Ma, the sediment was being derived from a much wider area including the Yangtze Craton. We suggest that this enhanced catchment may have reflected the influence of the Yangtze River and/or the Korean Peninsula in supplying the Shikoku Basin prior to rifting of the Okinawa Trough and migration of the Palau-Kyushu Ridge to form a barrier to transport. The narrowing of provenance into the Nankai Trough partly reflects continued uplift of the Shimanto and Sanbagawa Complexes since the Middle Miocene.