Detrital zircon study of the Salween River drainage

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Detrital zircons from riverbank sands have been used to assemble the picture of crustal evolution of the drainage area. Here we report U-Pb and Hf isotope data of detrital zircons from a recent sand sample from riverbank and two samples from Triassic strata in eastern Burma to provide relative information of the Salween River, which is soured from Tibet plateau and flows over the eastern Qiangtang, eastern Lhasa and Sibumasu terranes.

Based on our data, these detrital zircons can be genetically related to the major batholiths in the drainage area. The age and $\varepsilon_{Hf}(T)$ distribution given by these detrital zircons, agrees with that of sediments from southern Sibumasu in Malya Peninsula (Sevastjanova et al., 2011), and exhibits isotopic characteristics mimicking products of crustal remelting. Compared the distribution of age peaks displayed by detrital zircons from other major rivers in SE Asia, the similarities and dissimilarities imply the periodic formation and separation of supercontinents. Furthermore, only the detrital zircons younger than Jurassic from the drainage area of the Yarlu-Tsangpo-Bramaputra and Irrawady Rivers reveal the conspicuous injection of juvenile materials into crustal evolution. The discrepancy between these two western major rivers and the Salween River is interpreted as inheritance of the two parallel magmatic belts with distinct isotopic characteristics that has been recognized in Southern Lhasa and Burma (Lin et al., 2013).