

Whether the Ping Basin is Part of Gondwanaland or Cathaysia, SW China?

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The basin evolution was recorded in sedimentary rocks. And basin affiliation can be solved by the ages distribution and Hf isotope from detrital zircons. The Lanping Basin is located in the Sanjiang-Tethys Orogen, west of the Yangtze Block, and whether it is part of the Cathaysia or Gondwanaland has been a hot question discussed. This manuscript documents the affiliation of Lanping Basin using detrital zircon age distributions, Hf isotopic geochemistry of detrital zircons and the magmatic rock from the Lanping Basin and surrounding area.

By comparing the detrital zircon age distributions and magmatic rocks (Fig. 1), the detrital zircon in the basin have the similar ages with the Early Neoproterozoic magmatic rocks in the western Yangtze Block and the Triassic magmatic rocks from middle part of Lanping Basin and the area where Yangtze Block is in contact with the Sanjiang-Tethyan Orogen, which might be the provenance for sedimentary units. The combination of the zircon profiles, ages distribution and Hf isotope from detrital zircons in Lanping Basin, Tengchong-Baoshan Terrane and western Yangtze Block (Fig. 1), it shows that the basin has a Cathaysian-affinity, rather than one involving Gondwanaland during tectonic evolution.

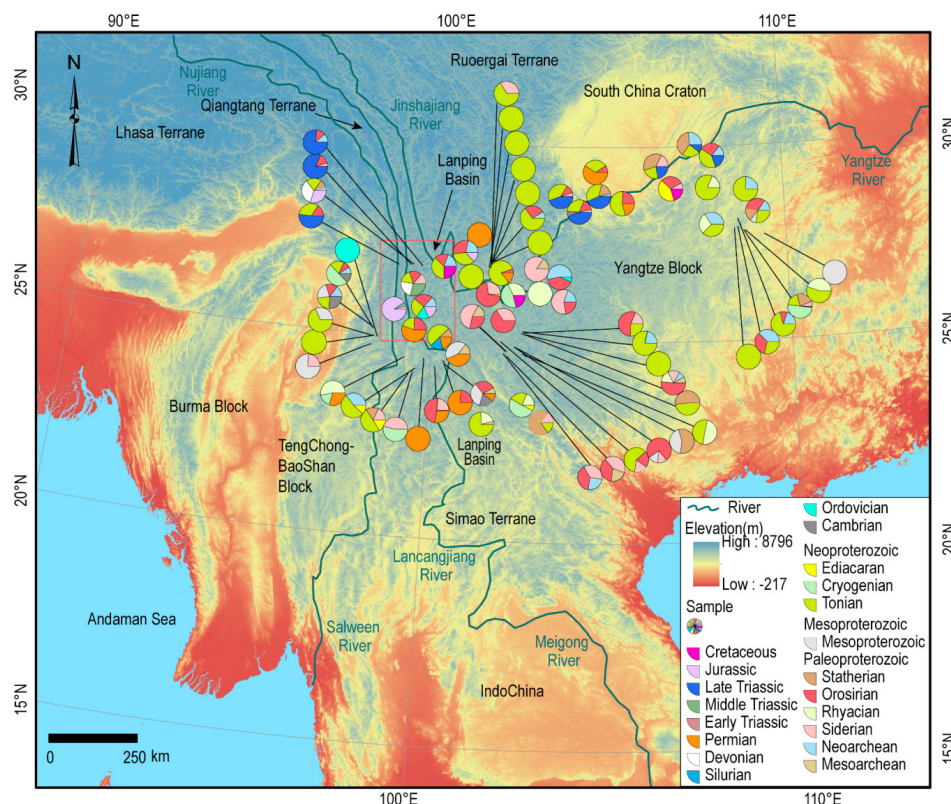


Fig. 1. Ages distribution of detrital zircons from the Lanping Basin and neighbouring areas. Pies with colours mean different peak ages of detrital zircons shown as the legend, and the area ratio of pies show percentage of the peak age in one sample. The position of the pies is where the clastic samples were collected.

Biography:

Lifei Yang is a doctor student at the China University of Geosciences in Beijing (China) at present, graduated with a B.Sc. (2014) from Yunnan University. His research fields include tectonic evolution, metallogeneses and sedimentology of the Sanjiang Tethys, SW China. From now, he has published 6 SCI research papers.