

Paper Number: 2580

## **Is the South China Block an accretionary orogeny? Insights from recent geological and geochronological evidence**

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It is widely accepted that the Yangtze and Cathaysia blocks were fused to present South China along the Jiangnan Orogenic Belt during the Neoproterozoic. However, recent new SHRIMP U-Pb data reveals magmatic detrital zircons from the Wuyi metamorphic domain can be apparently divided into two age populations: Paleoproterozoic (1874-1856 Ma) and Neoproterozoic (~910 Ma). Thus, the Wuyi metamorphic domain can be divided into two distinct parts: Paleoproterozoic in the eastern side and Neoproterozoic in the western side. They underwent different and independent metamorphic events at Triassic (~240 Ma) and Proterozoic (~440 Ma), respectively. This hence indicates that the Wuyi metamorphic domain could have two different basements, which experienced different evolution history. Therefore, our new data suggests that the Wuyi metamorphosed domain could be divided in to Western Wuyi and Eastern Wuyi. The Eastern Wuyi is dominated by Paleoproterozoic basement, which was metamorphosed at ~240 Ma. The Western Wuyi reveals an ~910 Ma arc system with input from juvenile source. These features are consistent with the Shuangxiwu and Yunkai domains. Tectonically, the Shuangxiwu, Wuyi and Yunkai arc terranes are a series of disrupted Proterozoic metamorphic domains, located on the western sides of the Cathaysia Block, which are bounded on their eastern side by the Zhenghe-Dapu-Gaoyao-Huai fault system. Therefore, the Cathaysia Block can be divided in to Western Cathaysia and Eastern Cathaysia. The Eastern Cathaysia is dominated by Paleoproterozoic basement, which was metamorphosed at ~240 Ma. The Western Cathaysia, composed of the Shuangxiwu, Wuyi and Yunkai metamorphosed domain, reveals 1.1~9.0 Ga arc systems with input from juvenile source then underwent Caledonian high-grade metamorphism.

