

The tectonic boundaries of the Jiangnan belt in South China: insights from potential-field anomalies

*Lianghui Guo¹

1. China University of Geosciences (Beijing), School of Geophysics and Information Technology

The tectonic boundaries of the Jiangnan belt in South China, which developed during the Neoproterozoic, has remained unknown or controversial for decades. A long NW-trending deep seismic reflection profile across the Yangtze and Cathaysia blocks in South China was conducted by the SinoProbe-02 project for the first time in 2010–2012. From the analysis and interpretation of this seismic data, 2-D gravity modeling was proposed, suggesting that both Yangtze and Cathaysia blocks are notably different in crustal structure, and that the northern boundary of the central Jiangnan belt is bounded by Fangjingshan and the southern boundary is bounded by Qidong county. Then the regional gravity and magnetic anomalies were analyzed and interpreted comprehensively, showing that Yangtze and Cathaysia blocks have distinct features of gravity and magnetic anomalies due to various crustal structures and tectonic deformation. The results indicate that the northern boundary of the Jiangnan belt is located in the Shitai–Jiujiang–Dayong–Tongren–Hechi–Baise line, and the southern boundary is located in the Shaoxing–Jiangshan–Pingxiang–Qidong–Yongzhou–Guigang–Nanning line, which possibly represents a Neoproterozoic suture between Yangtze and Cathaysia blocks.

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