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# I-type granitoids associated with the early Paleozoic intracontinental orogenic collapse along pre-existing block boundary in South China

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## Abstract

The early Paleozoic Wuyi-Yunkai orogeny resulted in extensive magmatism in the Cathaysia and eastern Yangtze blocks, South China. Identifying the nature of related magmatism is essential for understanding the orogeny that remains enigmatic with regard to its tectonic setting and geodynamic driving force. The Zhangjiafang pluton (438±3 Ma) in western Jiangxi province is composed of predominant granodiorite with abundant coeval mafic-intermediate microgranular enclaves (MMEs) (~433±5 Ma). The granodiorite samples are weakly peraluminous (A/CNK = 1.05–1.09) and have low SiO<sub>2</sub> (61.9–64.9 wt %) and high Fe<sub>2</sub>O<sub>3</sub> (4.6–5.6 wt %), MgO (2.2–2.8wt %) and CaO (4.3–4.8 wt %), belonging to I-type suite due to abundant amphibole in the rocks. They exhibit strongly negative whole-rock  $\epsilon_{\text{Nd}}(t)$  values (-11 to -9) and zircon  $\epsilon_{\text{Hf}}(t)$  values (-14 to -4), similar to the basement of the Cathaysia Block, but distinguishable from simultaneous I-type granites of the Banshanpu and Hongxiaqiao plutons in eastern Yangtze Block in

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