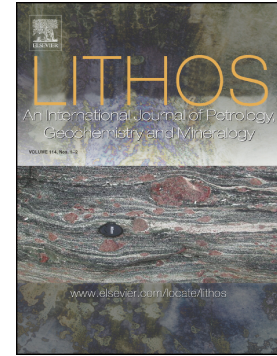


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# A source-depleted Early Jurassic granitic pluton from South China: Implication to the Mesozoic juvenile accretion of the South China crust

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**Abstract:** Source-depleted granites were rarely reported in South China. Hereby we identified such a granitic pluton, the Tiandong pluton, at Northeastern Guangdong province in Southeastern (SE) China. Whole-rock Sr-Nd and zircon Hf isotopes of the Tiandong granites both revealed obviously depleted source signatures, with initial isotopic values of initial  $^{87}\text{Sr}/^{86}\text{Sr} = 0.7032\text{-}0.7040$ ,  $\varepsilon_{\text{Nd}}(t) = 1.1\text{-}1.5$ , and  $\varepsilon_{\text{Hf}}(t) = 6\text{-}13$ , respectively. Zircon U-Pb dating implied the granite was intruded in Early Jurassic (188 Ma). The dominant minerals of the Tiandong granite consist of K-feldspar, plagioclase, quartz and biotite, with accessory mineral assemblage of apatite + zircon + magnetite. Based on the mineralogy and the depleted isotopic signature, the granites chemically show I-type affinity such as low  $\text{Zr+Nb+Ce+Y}$  (131.6 to 212.2),  $10^4 \times \text{Ga/Al}$

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