Geochemistry and geochronology of mafic rocks from Western Guangxi，South China：Implication for the Paleo-Tethyan subduction and Emeishan mantle plume coexisting

BAOHUA WANG[1], XIJUN LIU[1],ZHENGLIN LI[1], SHUAI LIAO[1]

[1] Guangxi Key Laboratory of Hidden Metallic Ore Deposits Exploration，Guilin University of Technology, Guilin, 541004, China (wangbaohua@glut.edu.cn)

The interaction between South China blocks and Indochina is critical to understand the evolution of Southeast Asia and the Paleo-Tethys. To explore their natures and evolutionary history, this study reports new petrological studies and geochemistry, LA-ICPMS zircon U-Pb ages for the mafic rocks from Chongzuo and Funing area in South China, including a layer of mafic dykes. Chongzuo mafic rocks show a negative anomaly in Nb and Ta, quite positive in LILE(such as Th, U) and also with narrow $^{87}Sr/^{86}Sr$ (t) values (0.708853 to 0.709179) and εNd values (0.01 to -0.28). Zircons U-Pb dating of selected gabbros have got weighted mean $^{206}Pb/^{238}U$ age of 244.7±1.2Ma. The trace elements and Sr-Nd isotope of mafic rocks can be compared to the arc/back arc basalts from Mojiang of Ailaoshan suture and Jingshajiang suture, the ratios of incompatible elements , the high $^{87}Sr/^{86}Sr$ (t) values and low εNd values(<4) indicate these mafic rocks originated an EMII like source and may suffered a contamination of sediment from oceanic crust. Based on these envidence we proposed that subduction of Paleo-Tethys during the early Triassic can be responsible for their genesis.

The geochemical characteristics of the Funing mafic rocks have a extrem high Ti/Y ratio (643~1808), belonging to the high-Ti alkaline basalts with a positive anomaly in Eu (δEu = 1.11-2.01), slight negative in LILE(such as Rb, Th, U) and HFSE（Zr, Hf and Y）, and slightly wider $^{87}Sr/^{86}Sr$ (t) values (0.7047 to 0.7061) and εNd values (0.27 to 1.17)，show similar characteristics to high-Ti basalts in Emeishan Large Igneous Province (ELIP). Their SHRIMP Baddeleyite-zircon U-Pb age yeilds 258.3 ± 5.0Ma, indicate the mafic rocks in Funing area belong to the high-Ti series of ELIP.

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