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Metallogenic types and spatial-temporal characteristics of uranium deposits in South China: implications for the subduction of Pacific plate to Eurasian plate

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The South China Block which comprised of the Yangtze Block in the northwest and the Cathaysian Block in the southeast hosts numerous uranium deposits which are the major source of uranium for China. Based on the lithology of host rocks, the deposits are classified as granite type, volcanic type, sandstone type, and C-Si-politic type (Fig.1). The mineralization ages of these deposits have been extensively studied, and previous studies reported three major episodes of uranium mineralization in this region at 130-100, 90-65, and 60-25Ma that corresponding to regional extensive tectonism, however, failed to discuss the differences and similarities between different types. Most of the granite type formed in the central-southern region of South China that during Cretaceous-Cenozoic; the volcanic type mostly occurred in the south coastal volcanic belt with mineralization ages of Cretaceous; the sandstone type usually occurred in the redbed basins that formed in Cretaceous-Cenozoic which means most of them mineralized at Cenozoic; the C-Si-politic type commonly occurred in the south margin of Yangtze block, with similar ages to sandstone type. The closely mineralization age span of four type uranium deposits in South China suggest they are nearly same in genesis which should be related to the subduction of the Pacific plate to Eurasian plate, In spite of they are different in ore-hosting rocks.

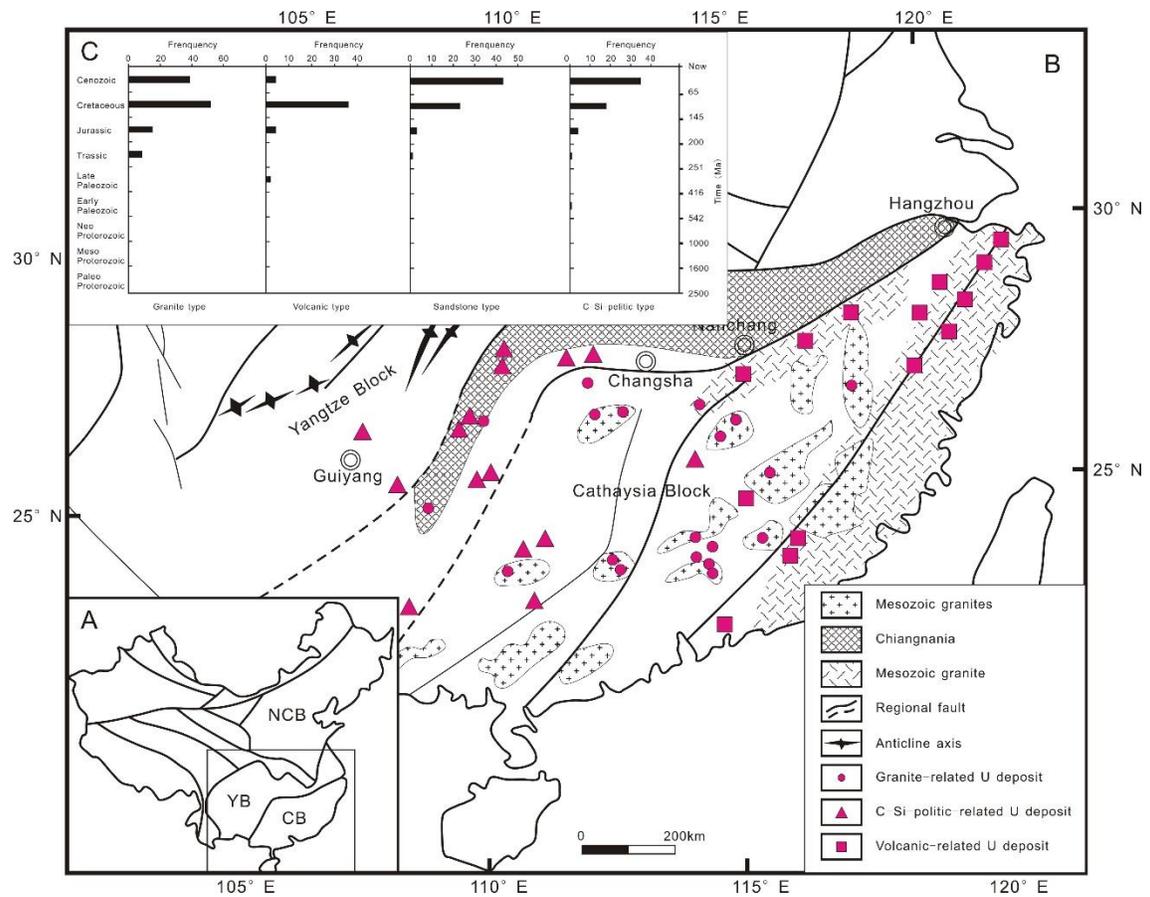


Figure 1: A. The Sketch map is showing the location of South China; B. The geological sketch map of South China is showing the distribution of uranium deposits of different types (modified from Hu et al., 2007 [1]); C. the statistical graph of mineralization ages of different types in South China.

References:

[1] Hu R.Z. et al. (2007) Mineral Deposits 26(2): 139-152

