

# GEOCHEMICAL EVIDENCE FOR PERMIAN-TRIASSIC PALEOENVIRONMENTAL CHANGES IN GUIZHOU, CHINA

NAN, J., WU, M., ZHOU, D., WANG, Z. State Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang, 550002, Guizhou Province, P. R. China

In this paper, the characteristics of  $\delta^{18}\text{O}$ ,  $\delta^{13}\text{C}$  and  $\text{Ce}_{\text{anom}}$  of the Permian-Triassic carbonates at the Langdai and Shitouzhai sections, as well as of the total carbon content (TCC) and  $\delta^{13}\text{C}_{\text{org}}$  of the Permian-Triassic boundary sediments at the Lekang section, in Guizhou, China, were studied.

The results show that there were three geological periods with different type of climate during the Permian and Triassic in the Upper Yangtze area. The limestones in Permian are characterized by Lower  $\delta^{18}\text{O}$  and higher  $\delta^{13}\text{C}$ . The  $\text{Ce}_{\text{anom}}$  values of them are less than -0.1. It is suggested that warmer and moist weather may be dominated, and the ocean was in an oxidizing condition during Permian. The Early-Middle Triassic carbonates have higher  $\delta^{18}\text{O}$  and lower  $\delta^{13}\text{C}$  values, as well as higher  $\text{Ce}_{\text{anom}}$  values (>-0.1). It indicates that there was a prevalent dry continental climate with a reducing environment in the ocean during Early-Middle Triassic when marine species were largely reduced. The  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$  values of the Late Triassic limestones are ranged between those of Permian and Early-Middle Triassic, and their  $\text{Ce}_{\text{anom}}$  values are lower (<-0.1). It means that the ocean changed to oxidizing condition and the moist climate started again in Late Triassic.

There is 3 ‰ negative shift of  $\delta^{13}\text{C}_{\text{org}}$  in P/Tr boundary sediments at the Lekang section, Guizhou, which can be correlated with other P/Tr boundary sections in the other parts of the world. Its origin may be related to the global mass extinction event between the Permian and the Triassic.