STUDY ON REE GEOCHEMISTRY OF PERMIAN-TRIASSIC STRATA IN GUIZHOU, CHINA

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The rare earth elements (REE) may provide the best information about source of sediments and their behaviors in oceans are important indicators of depositional environments .

In this paper, the REE composition of clastic rocks within platforms and basins was studied. It shows that the sediments may be from different denuded areas. The Late Permian-Early Triassic pelites in platforms came from the Kangdian paleocontinent in the northwest and effected by the Ermeishan tholeites. However, those of the Middle Triassic turbidites in basins were from Youjiang Orogenic Belt in the southwest.

The REE contents of Permian-Triassic sedimentary rocks in Guizhou apparently differ from those of the Russian Platform and the Post-Achean crust. The result indicates that the Upper Yangtze Plate still was of active features, although the crust in Guizhou had transformed into continental crust after the Caledonian Movement. It was coincident with that the structural and magmatic activities frequently worked out in the area.

The Ce_{anom} values show that the redox conditions of oceans varied from Permian to Early-Middle Triassic and Late Triassic in Guizhou. The oceans in Permian were in oxidizing condition. Accompanying to the mass extinction events in the end of Late Permian, the oceans in the Early-Middle Triassic changed to anoxic condition, then resolved to oxidizing condition in the Late Triassic.