Variance of REEs distribution in two weathered granitic profiles in East Tibet Plateau, China

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As one of the most applied tracers, REEs can provides clues to geology and geochemistry process. Two granitic regolith profiles (ND and GTC) from different climate zones in East Tibet Plateau were studied. Profile GTC belong to the subtropical zone enjoying a humid monsoon climate. Profile ND belong to the border region of monsoon zone and westerly belt enjoying a plateau continental climate. The mean annual precipitation and tempreture are 300 mm, 3.3℃, respectively. As to profile GTC, The MAP and MAT are 1481 mm,14.8℃, respectively.

The concentration and distribution pattern reveals that 1) Influenced by climate, the fractionation of LREEs and HREEs in profile ND and GTC varied during weahtering process. The ratio of LREEs/HREEs in pedosphere is little higher than semiregolith in tropical profile GTC; 2) Negative anomaly of Eu in both profiles is the result of bedrock weathering. Positive anomaly of Ce is observed in all layers in profile ND, and only in upper 100 cm in profile GTC. This result indicates that weathering redox condition along regolith profile in different climate veries considerably. 3) Normalized by chondrite, LREEs accumulate much more than HREE, the distribution curves of REEs are right-lean and V-type Eu anomaly in both profiles.