Ce anomaly in I-type granitic soil from Kuantan, Peninsular Malaysia: retention of zircon in the weathering product.

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Abstract

This paper describes the Ce anomaly observed in granitic soil from the humid, tropical area of Kuantan, Pahang, Peninsular Malaysia. Three granite rock soil profiles from Kuantan, were sampled and all samples were analysed for rare earth elements. All the profiles of the granitic soil samples show prominent positive Ce anomalies, with the Ce/Ce* ratio values (Ce/Ce* = CeN/\sqrt{LaN,PrN}) ranging from 1.2 to 125. Ce* is compatible in zircon because it has also the same charge and a similar ionic radius as to Zr* (Ce* = 0.97 Å; Zr* = 0.84 Å). The retention of zircon in the weathering product of the granitic rocks will increase the Ce content in the soil. Thus it is likely that the positive Ce anomaly in the REE profile of the Kuantan Granites may also have resulted from retention of zircon in the weathering product.

Keywords: Ce anomaly, granitic soils, Mineral zircon, Rare Earth elements, zircon