Influence of microalgae in REE Biogeochemistry at Funil Reservoir, Southeastern Brazil

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Rare earth elements (REE) have specific biogeochemical characteristics [1-3]. This study aims to evaluate the role of algae on REE behaviour. Considering the proposed objectives, water samples were collected in during dry and rainy seasons: upstream the Funil reservoir at Queluz; at the reservoir; and downstream the Funil Reservoir, at Itatiaia. REE concentrations were determined by ICP-MS. Results indicate high chlorophyll a concentration at Funil Reservoir during rainy season, suggesting the importance of microalgae on REE biogeochemistry. The sum of dissolved REE varied from 2.12 to 12.22 $\mu g.L^{-1}$. Positive anomaly of La at Queluz also suggests anthropic contamination. The observed patterns indicate that Funil Reservoir act as biogeochemical barrier, modifying the fluvial transport of REE. Nonetheless, another factor that might influence REE behaviour is algal bloom, which occurs during rainy season, which affect REE biogeochemistry through incorporation and release of REE.

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