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Sergio Caetano-Filho, Gustavo M. de Paula-Santos, Dimas Dias-Brito

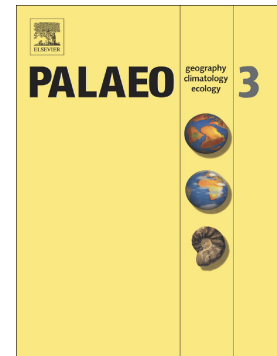
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Carbonate REE+Y signatures from the restricted early marine phase of South Atlantic Ocean (late Aptian – Albian): the influence of early anoxic diagenesis on shale-normalized REE+Y patterns of ancient carbonate rocks

Sergio Caetano-Filho^{a,*}, Gustavo M. de Paula-Santos^b; Dimas Dias-Brito^c

^a Instituto de Geociências, Universidade de São Paulo, São Paulo, SP 05508-080, Brazil.

E-mail: sergio.fcaetano@gmail.com*;

^b Instituto de Geociências, Universidade Estadual de Campinas, Campinas, SP 13083-870, Brazil. E-mail: gustavomps@yahoo.com.br;

^c Centro de Geociências Aplicadas ao Petróleo – UNESPetro, Universidade Estadual Paulista, Rio Claro, SP 13506-900, Brazil. E-mail: dimasdb@rc.unesp.br

Abstract

Rare earth elements plus yttrium have been extensively applied in paleoenvironmental studies of ancient carbonate successions due to their fractionation in the marine environment. However, in modern marine anoxic environments, seawater REE+Y signatures can be suppressed in reducing conditions (e.g. stagnant basins and/or early diagenesis) by REE remobilization from several sedimentary components (e.g. detrital siliciclastics, oxides, organic compounds). We present the shale-normalized REE+Y signatures for a transgressive marine carbonate succession of the primitive South Atlantic Ocean (latest Aptian-Albian), in a restricted marine setting with anoxic bottom conditions, to provide and evaluate the REE+Y record deposited in such conditions. Based on well-constrained paleoenvironmental reconstruction through microfacies analysis, three shale normalized REE+Y patterns were identified, varying according to the microfacies associations (MA) and related diagenetic environments: a) light REE-

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