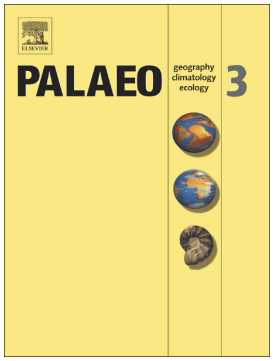

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Controls on regional marine redox evolution during Permian-Triassic transition in South China

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Abstract

Although oceanic anoxia is regarded as a leading cause of the Permian-Triassic boundary (PTB) mass extinction, its timing, extent, and underlying causes remain unclear. Here, we conducted a high-resolution Fe-S-C-Mo geochemical study of the entire Changhsingian and lowermost Induan succession in a carbonate-ramp setting at Ganxi, western Hubei Province, South China. Six stratigraphic units representing discrete redox intervals were identified based on integrated Fe-S-C-Mo data. Units I-III are of latest Wuchiapingian to early Changhsingian age, with Units I and III characterized by euxinia and Unit II by uncertain redox conditions. Unit IV, of mid-Changhsingian age, records a gradual