

遠洋域ペルム紀三畳紀境界層における硫化物硫黄同位体比の挙動 Sulfur isotope profiles in the pelagic Panthalassic deep sea during the Permian-Triassic transition

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Mesozoic accretionary complexes in Japan and New Zealand contain Panthalassic low latitude and southern mid-latitude deep-water sedimentary rock respectively. These sedimentary rocks record environmental changes in the pelagic Panthalassic Ocean during the transition associated with the severe Permian-Triassic mass extinction. This study presents sulfur isotope records of sulfide from continuous deep-sea Permian-Triassic boundary sections located in northeast Japan (the Akkamori section-2, the most continuous section amongst other previously reported deep-sea sections) and North Island of New Zealand (the Waiheke-1 section, providing the first sulfur isotopic record from a southern hemisphere deep-sea section). Both sections show sharp minus 15 permil drops of the sulfur isotope ratio coupled with a negative shift of organic carbon isotope ratio. Similar decreases in sulfur isotope ratio of carbonate-associated sulfates by minus 10 permil accompanied with a negative shift of inorganic carbon isotope ratio at the end-Permian mass extinction horizon have been reported in some shallow water Paleotethyan sections. These sulfur isotope changes suggest that a massive release of ³²S-enriched sulfur from the H₂S-rich water to the oxic surface-waters coincided with the end-Permian mass extinction.

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