

The concentration of toxic elements in the Permo/Triassic boundary, Meishan section and its significance

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The Permian-Triassic event is one of the most extensive events, which destroyed 90% marine species, 70% land vertebrate genera and most land vegetation, but the possibility reason for these most extensive events were not very clear till now. Hg and Sb are regarded as environmentally sensitive toxic elements for their toxicity and bioaccumulation. Here, the high-resolution of marine sediments from P-T boundary section, Meishan section were collected to investigate the concentrations of Sb and Hg. The average concentration of Hg and Sb are 0.024 $\mu\text{g/g}$ and 0.86 $\mu\text{g/g}$, respectively, which are remarkable higher than that of the average crust for Hg (0.007 $\mu\text{g/g}$) and Sb (0.20 $\mu\text{g/g}$). It is notably that there are the significant increasing tendency of the enrichment factors of Hg and Sb in the extinction horizon near the Permo/Triassic boundary, respectively. It may likely come from volcanic eruptions and high temperatures caused by eruptions activate the toxic metal elements in the black rock and coal-bearing formations and release them into the atmosphere, which would result in enrichment of toxic elements in the food chain, becoming one of the factors leading to mass extinctions.