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熱水活動が海洋環境と深海生態系にもたらす影響

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Environmental and Ecological Impact on Deep-sea Environment from Deep-sea Hydrothermal System

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Abstract

Hydrothermal circulations supply a huge amount of chemical species into the deep sea. More than 99% of chemical species emitted from high-temperature hydrothermal fluids flow into the deep sea and construct deep-sea hydrothermal plumes. Observations of hydrothermal plumes have led studies of deep-sea hydrothermal vents, such as locating deep-sea hydrothermal vents, locating deep-sea volcanic eruptions, and calculating geochemical fluxes from sub-seafloor to deep ocean. Hydrothermal plumes affect the microbial community in deep seas by supplying many reduced chemicals, which are possible energy sources of chemolithotrophic microbes. This paper (1) reviews physical, chemical, biological studies of hydrothermal plumes and (2) discusses novel field survey technology and ecological infection of sub-seafloor to the deep-sea environment.

Key words：deep-sea ecology, hydrothermal plume, chemolithoautotrophic bacteria, sulfur oxidation, biogeochemical flux
キーワード：深海生態系，熱水プルーム，化学合成微生物，硫黄酸化，化学・生物フラックス

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