

Ecological effect of hydrothermal plume on deep sea environment

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Seafloor is one of the largest interface of the biosphere in the earth. Interfaces among the subsystem of the earth, e.g. atmosphere, land, sea, and subseafloor, produce energy potential that harbors life. Hydrothermal plume assume the major flux of heat and chemicals between sea and subseafloor. In the TAIGA project, we investigated ecology in the hydrothermal plumes. We found that 1.) the microbial population was closely correlated with the chemical composition of hydrothermal fluid and 2.) the major microbes in the plume were putative sulfur oxidizer SUP05 and methane oxidizer Methylococcus. On the other hand, hydrothermal plume of Hakurei site at Izena hall and Pika site at southern Mariana trough harbors fewer microbial populations, which expected by their chemicals in hydrothermal fluid. Based on these microbial information, we will discuss the variety of hydrothermal systems in subduction zone.