
[EJ] Evening Poster | B (Biogeosciences) | B-PT Paleontology

[B-PT05] Evolution of Chemosynthetic Ecosystem in Earth History

convener: Robert Jenkins (School of Natural System, College of Science and Engineering, Kanazawa University), Hiromi Kayama WATANABE (Japan Agency for Marine-Earth Science and Technology), Takami Nobuhara (静岡大学教育学部理科教育講座地学教室)

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Chemosynthetic communities have changed in their taxonomic composition and spatial distribution through the Earth history, but the causes and backgrounds remain to be unclear. Topics and information in various studies will be exchanged between geology, paleontology, geochemistry, and biology. We also hope to raise some seeds of co-works on evolutionary study on chemosynthetic ecosystem.

[BPT05-P01] Across-axis transition of deep-sea hydrothermal vent fauna in southern Mariana Trough

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Dispersal is an important event to sustain metapopulations in ephemeral and patchily distributed environments such as deep-sea hydrothermal vent fields. Most hydrothermal vent fields are distributed along spreading axes, and across-axis dispersal of vent fauna is little known. In the present study, phase transition of hydrothermal benthic communities was observed and dispersal inferred among three hydrothermal vent fields, the on-axis Snail site, the off-axis Pika and Urashima sites and the Archaeal site in between, across axis in the Southern Mariana Trough. Size frequencies of *Austinograea williamsi*, *Chorocaris vandoverae* and *Alviniconcha hessleri* showed that populations in the Snail site were the largest among three sites. However, genetic diversities of local populations of *Al. hessleri*, *C. vandoverae* and *Neoverruca brachylepadoformis* were the highest in the Pika and Urashima sites, although no significant genetic subdivision was detected among the populations in all the examined species. Tidal analysis of a current meter deployed near Snail site supports the possibility for planktonic larval dispersal from on- to off-axis. These results suggested the possibility for across-axis larval dispersal which promotes on- to off-axis transition of benthic fauna in hydrothermal vent fields.