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Shallow hydrothermal vents as natural laboratories for global change studies

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Global change may affect organisms likely at all integration levels and in different systems. Subsurface marine hydrothermal vents (HVs) may provide a particular advantage to better understand past records and future climate predictions on marine organisms. They can provide insights in the mechanisms of actions of climate change conditions. Hydrothermal vents (HVs) provide such environments in sharing several factors with global and climate change phenomena (e.g., low pH and oxygen, high carbon dioxide and temperature, high loads of toxic chemicals such as H₂S and trace metals). Research on organisms from HVs might also provide insights in the molecular, ecological and evolutionary adaptations to extreme environments by comparing them with less adapted biota. Shallow water hydrothermal vents are easily accessible and may provide suitable templates for short and long-term experimental approaches to biotic effects and adaptations to environmental extremes and global change issues in a natural set-up that has evolved through probably billions of years. In the past decade, we studied such a shallow water hydrothermal vent system at the northeast coast of Taiwan.

Biography

Hans-Uwe Dahms has received his PhD and DSc degrees in Biology. He was invited to more than 80 countries worldwide for research and lecturing. He is presently a Professor at the Department of Biomedical Science and Environmental Biology in Kaohsiung Medical University, Taiwan. His current research is concerned with environmental health issues affecting public health.

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