



New Master Thesis Topic

Title: 4D Plume Mapping of the Jøtul Hydrothermal Vent

Short description:

We are offering an interdisciplinary master thesis combining physical oceanography, gas chemistry and marine geology with data from a newly discovered hydrothermal vent site at the Knipovich Ridge. The master thesis would include the processing of different data sets of the plume ejected at the hydrothermal vent site and the 4D visualization of the characteristic plume parameters. High-quality data was acquired during two research expeditions and include environmental parameters such as oxygen-reduction potential, turbidity, temperature, and gas analytical data from discrete water samples (including methane, hydrogen, helium). Such a detailed and high-resolution picture of an extracted hydrothermal plume would be unique and highly valuable for the scientific interpretation of such systems. The results will allow for better mapping and characterization of similar settings in future campaigns as well as form a baseline for studies at this particular vent site to be investigated further during a potentially upcoming research cruise.

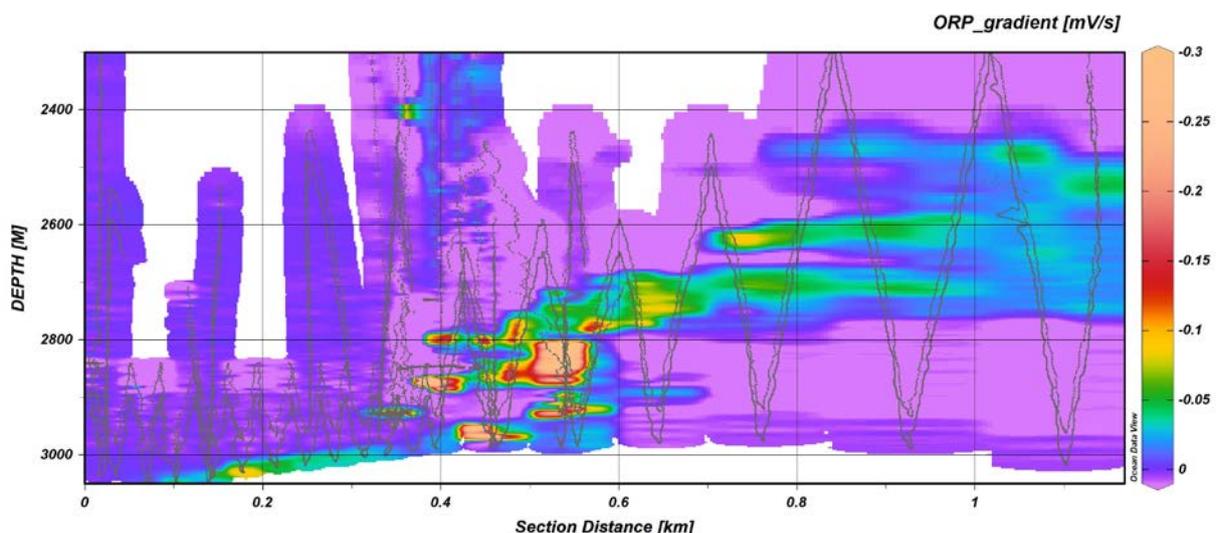


Fig. 1: Cross section of the plume detected at the Jøtul vent field visualizing the oxygen-reduction potential in the water column.

More information:

<https://www.marum.de/en/New-hydrothermal-field-discovered-by-MARUM-expedition.html>

<https://www.marum.de/en/MSM109.html>

<https://www.marum.de/en/MSM131.html>

or contact:

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Skills needed:

- Interest in working interdisciplinary
- Good programming/data visualization skills
- Experience with heterogenous data sets is an advantage

Name of the IUP research group incl. two-line description of the research area:
Physical Oceanography in cooperation with Marine Geology (MARUM/FB5);
hydrothermal vent research, plume dispersal

Topic for students of

M.Sc. Environmental Physics

M.Sc. Space Sciences and Technologies

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(date)