



Observation of alive benthos under a sharp hypoxia and high H₂S concentrations inside the microbial mats (methane seeps in the shallows of Black Sea)

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In 2008 experimental as well as in situ investigations were implemented for studying of vitality and locomotion activity of the micro- and meiobenthos associated with the gas seeps. Research area: near-shore shallow field with the gas seeps, southern sector of Tarkhankut Cape, NW Crimea Peninsula, Black Sea.

Cuvette LDO-oxymeter coupled with other sensors and also life-time diagnostics of the organisms including microscopic video filming were used for this case.

Concentrations of dissolved methane in the pore space of microbial mats were varied from 27 to 1076 $\mu\text{L}/\text{cm}^3$ (220 on average).

Content of organic matter of the uppermost seep mats was approximately in 50 times higher than at the background stations. Probably, such enrichments are attractive for benthic organisms. At the same time, H₂S-pollution of seep microbiotope environment is detected as critical ($\text{Eh} = -400/-460 \text{ mV}$).

Near to the gas seeps alive and active Polychaeta, Nematoda, Harpacticoida and Ciliata were found. It is important, that anoxia-adapted organisms of the last two groups were quickly died at contact with air.