



Microbial Dissolved Organic Matter utilisation at the nearsediment waters in the Baltic Sea Deeps

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Recent studies suggested that sediment pore waters may serve as a source of bioavailable DOM to the overlying water column, which may stimulate microbial activity in the nearbottom waters. However, a combination of DOM measurements with proxies of heterotrophic activity was not a priority of those studies. In this study, we aim to assess the bioavailability of DOM, released by sediments, and whether it may stimulate an increase in heterotrophic cell number. For this, we conduct the measurements of dissolved organic carbon (DOC) and DOM optical properties, such as chromophoric (CDOM) and fluorescent (FDOM) DOM, from the sediment pore waters of the Baltic Sea Deeps and in the water column in order to evaluate the initial supply flux (return flux) to the bottom waters and provide essential insights on the starting composition of DOM. We combine those measurements with the temporal changes of DOC, CDOM and FDOM during ex-situ incubations of the sediment cores with overlying water to infer quantitative and qualitative transformations of DOM during the incubation time. We discuss those data in combination with microbial abundance, oxygen and nutrient consumption as a proxy for sediment released DOM to serve as a substrate for heterotrophic communities to grow and function.