Spectral-Luminescent Characteristics of CDOM in Stratified Water Bodies of the Kandalaksha Coast of the White Sea

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Currently spectral luminescent analysis is often used to study the environment. It is known that natural water always contains a certain amount of chromophoric dissolved organic matter and particulate organic matter including bacterial cells, that absorb or scatter sunlight. The optical properties of natural water play an important role in the functioning of aquatic ecosystems, which indicates the relevance of this kind of research. The content of chromophoric dissolved organic matter, particulate organic matter and microorganisms in water determines the spectral composition of light penetrating to a certain depth. In this paper, natural water from meromictic water bodies with high stable vertical stratification of layers was studied. The presentation summarizes the results of studying the spectral- luminescent properties of natural water taken from various depth in the meromictic water bodies of the Kandalaksha coast of the White Sea. For water bodies at different stages of isolation from the White Sea, the coefficients of light attenuation by the water column above a certain depth were calculated using absorbance values from different depths for the winter and summer seasons. These data are important to examine the development of phototrophic microbial communities inside the water column and also to understand the evolution of meromictic water bodies.