

# **Spectral properties of CDOM depending on depth in artificially and naturally separated water bodies**

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Optical characteristics of colored dissolved organic matter (CDOM) were studied in the Kanda Bay artificially separated from Kandalaksha Bay of the White Sea by a railway dam, as well as in several lakes and lagoons of the Kandalaksha coast. These reservoirs are unique hydrological objects being at different stages of isolation from the White Sea. Absorption spectra were recorded for water sampled from different horizons in March and in August 2023. Optical indices were calculated from absorbance values, and a search was made for the optical characteristics of water, which correlate with its hydrochemical characteristics. Samples from the freshwater lake for different depths are similar in the shape of absorption spectrum or absorbance values, but differ from the absorption spectra of CDOM of marine type (from the marine part of Kanda Bay, Lagoon on Zeleny Cape). For water from different horizons of meromictic water bodies, the shape of the absorption spectra depended on the depth. This is explained by the different origin of CDOM and the difference in its concentration in case of disturbed water circulation. In the mixing zone, an anti-correlation was observed between the optical density of CDOM in the UV range (D350) and the water salinity. However, in meromictic water bodies, this regularity is violated: D350 increases with water salinity down towards the bottom. According to the CDOM optical characteristics, one can judge the type of natural water (salty or fresh water), the degree of CDOM concentration at depth, as well as the violation of water circulation.