



Detection of aromatic and highly substituted unsaturated systems in marine organic molecules in Baltic sea surface by spectrofluorometric and spectrophotometric methods

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This paper presents results of characterization of Dissolved Organic Matter with fluorescence spectroscopy in the surface micro layers (SML) and subsurface layers (SS) in the Baltic Sea. Samples for spectroscopic measurements were collected during two research cruises in April 2013 and 2015 in a surface microlayer (SML) and a subsurface layer (SS) at a depth of 1 m along two transects from the river outlets to the open sea. First transect was located off the Vistula River outlet to the Gdańsk Deep and the second transect was located off the Parsęta River outlet to Bornholm Basin. Results indicated that DOM fluorescence intensity in the SML is higher by 20% compared to the SS. The Humification Index, HIX values were lower in SML than SS by 13%. That indicates that SML is depleted in molecules with high molecular weight and higher aromaticity. The inverse relationship of fluorescence intensity of dominant peak with salinity both in SML and SS suggests that FDOM variability is regulated mostly by terrestrial DOM input.