DYNAMICS OF DOM IN THE LENA DELTA REGION (SIBERIA) REVEALED BY PARALLEL FACTORIAL ANALYSIS

Rafael Gonçalves-Araujo[1]; Colin Stedmon[2]; Alexandra Kraberg[1]; Astrid Bracher[1]

[1]Alfred Wegener Institute for Polar and Marine Research, Germany
[2]National Institute for Aquatic Resources - Technical University of Denmark, Denmark

The dynamics of dissolved organic matter (DOM) in the Lena River delta region (Laptev Sea, Siberia) were assessed by using the spectrofluoroscopy technique. Both the chromophoric and fluorescent fractions of DOM (CDOM and FDOM, respectively) were analyzed in relation to hydrography. Parallel factorial analysis (PARAFAC) showed the presence of six different components, with four humic-like components, 1 marine humic-like and one protein-like. The total CDOM (obtained by the absorption at 350nm, aCDOM) and also the six components detected by the PARAFAC analysis showed inverse relationship with salinity. The highest aCDOM values (10-15m⁻¹) with the highest values associated to the Lena outflow and the lowest (<3m⁻¹) with the salty marine waters. However, all those parameters exhibited a non-conservative behavior in relation to salinity. In a general way, the total aCDOM showed to be removed within the study region. However, when looking at each of six components, different behaviors were presented by these components: most of the components were characterized by removal, except for the common humic-like A peak and the protein-like (autochthonous) that were released in almost all the samples.