



PARAFAC analysis of temperature impact on the fluorescence of DOM

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It is known that temperature affects the properties of DOM fluorescence, especially the fluorescence intensities. Several studies have demonstrated the effect of thermal quenching on the fluorescence of DOM, but detailed literature concerning the effects of lower temperatures (below 5° C) is surprisingly sparse. Moreover, no research has been done to assess the effects of temperature by combining fluorescence EEM and parallel factor analysis (PARAFAC) modelling. This work reports the effects of temperature on the DOM fluorescence of filtered fresh-water samples between temperatures of 0° C and 20° C. Fluorescence intensity increased linearly with respect to temperature decrease at all temperatures down to 0° C. Results showed that temperature affected differently the PARAFAC components associated with humic-like and tryptophan-like fractions of DOM, depending on the water type.