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## Stability of fluorescence spectra of various water systems

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During the last years fluorescence spectroscopy was developed to be a fast and inexpensive way for water quality measurement in various water systems to characterize natural and human influenced water bodies regarding organic matter and contamination. Analyzing samples in a timely manner is crucial to gain valid and reproducible excitation emission matrix (EEM) data, but often difficult, specifically in transnational projects. In this project the shift of fluorescence spectra and other parameters over time is evaluated. Ten different ground-, creek- and river water, as well as wastewater treatment plant effluent samples were stored for more than 20 days. EEM data, as well as high pressure liquid chromatography (HPLC) spectra data and chemical standard parameters like pH, ORP (oxidation/reduction potential), TOC,  $\text{NH}_4$ ,  $\text{NO}_3$ ,  $\text{NO}_2$  and  $\text{PO}_4$  were measured daily and correlated. With this dataset the sample and fluorescence spectra stability were evaluated. Different mathematical and statistical methods, including Parallel Factor Analysis (PARAFAC) as well as novel statistical approaches, were applied for assessment of EEM and HPLC spectra. This further enables the direct comparison of the included analysis methods.