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Resolving the dynamics of dissolved organic matter with absorption and fluorescence spectroscopy: shedding some light on a 'black box'.

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Dissolved organic matter (DOM) is made up of a complex mixture of compounds. Its composition and herein characteristics, vary with supply, mixing, and degradation processes. The complexity of the mixture makes it very difficult to characterise with traditional chemical methods. UV-Visible spectroscopy has been used for a long time, to characterise and trace dissolved organic matter in marine and freshwater environments. Although only a sub-fraction of DOM is coloured, these measurements can be used as a proxy for changes occurring to the DOM pool as a whole and provide valuable insight into the dynamics of this pool of largely uncharacterised material. The rapid and simple nature of these analyses also make this approach suitable for intensive sampling programs and in situ measurements, elucidating large scale spatial patterns and short term fluctuations in DOM quantity and quality. This talk will provide a brief introduction of the use of absorption and fluorescence spectroscopy as means to characterising DOM. Additionally recent developments in the approaches to interpreting and exploring spectral data will be presented.