



## **Characterisation of anthropogenic contribution to the coastal fluorescent organic matter**

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It is known that most of the coastal fluorescent organic matter is of a terrestrial origin (Parlanti, 2000; Tedetti, Guigue, & Goutx, 2010). However, the contribution of the anthropogenic organic matter to this pool is not well defined and evaluated. In this work the monitoring of little bay (Toulon Bay, France) was done in the way to determine the organic fluorescent response during a winter period. The sampling campaign consisted of different days during the month of December, 2014 ( 12th, 15th, 17th, 19th) on 21 different sampling sites for the fluorescence measurements (without any filtering of the samples) and the whole month of December for the bacterial and the turbidity measurements. Excitation Emission Matrices (EEMs) of fluorescence (from 200 to 400 nm and 220 to 420 nm excitation and emission range) were treated by parallel factor analysis (PARAFAC). The parafac analysis of the EEM datasets was conducted using PROGMEEF software in Matlab langage. On the same time that the turbidity and bacterial measurement (particularly the E.Coli concentration) were determined. The results gives in a short time range, information on the the contribution of the anthropogenic inputs to the coastal fluorescent organic matter. In addition, the effect of salinity on the photochemical degradation of the anthropogenic organic matter (especially those from wastewater treatment plants) will be studied to investigate their fate in the water end member by the way of laboratory experiments.

Parlanti, E. (2000). Dissolved organic matter fluorescence spectroscopy as a tool to estimate biological activity in a coastal zone submitted to anthropogenic inputs. *Organic Geochemistry*, 31(12), 1765–1781. doi:10.1016/S0146-6380(00)00124-8

Tedetti, M., Guigue, C., & Goutx, M. (2010). Utilization of a submersible UV fluorometer for monitoring anthropogenic inputs in the Mediterranean coastal waters. *Marine Pollution Bulletin*, 60(3), 350–62. doi:10.1016/j.marpolbul.2009.10.018