



Accurate isotopic determinations ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) of the organic material from rivers discharging into the Gulf of Lions (NW Mediterranean Sea)

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Rivers associated deltaic environments are particularly important since they provide the major pathways for the input of terrestrial organic matter to marine sediments. However, biogeochemical characteristics of carbon and nitrogen remain largely understudied. A high-quality understanding of these coastal environments requires a good study of the hydrology and the different forcing mechanisms as well as a detailed quantitative and qualitative characterisation of riverine inputs.

The Gulf of Lions (NW Mediterranean Sea) is a coastal area mainly influenced by the Rhône river but also by numerous small Mediterranean rivers. These small rivers are characterized by fairly low average liquid and solid discharges that may however reach tremendous values during flash-flood episodes.

Our objective is to trace with C and N stable isotopes ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) the organic material discharged into the Gulf of Lions by the Rhône river and five typical Mediterranean rivers (Têt, Agly, Aude, Orb, Hérault) in order to follow this material on sediments of the continental shelf. To define accurately the riverine isotopic signatures, we have integrated the temporal variations by fitting out a one-year survey. During this survey, we collected monthly and simultaneously suspended particles from all the selected rivers at sampling stations located close to the mouths. We will therefore determine whether the isotopic signatures are similar between all the rivers and how these signatures vary according to the seasons and the water discharge. The results of this study will then help us to determine with accurate the terrestrial influence into the Gulf of Lions.