

# The Rhone Sediment Observatory: a Multi-Partner Platform for Basic and Applied Research on the Rhone River Valley (France)

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The Rhone Sediment Observatory created in 2009 involves an interdisciplinary research team (hydrology, hydraulics, geomorphology, geochemistry, ecotoxicology, geomatics, sedimentology) in strong interactions with river practitioners. Its aim is to provide new scientific knowledges for promoting a sustainable management of channel forms and sediment processes of this river, one of the most important in the Mediterranean Sea. The Observatory covers the whole French section of 512 km long, starting from the France-Switzerland border up to the delta.

A set of key-questions were asked by stake-holders which need several years to be answered:

- How floods and channel morphology are interacting?
- What is the contribution of sediment delivery to the beach evolution of the delta and adjacent coasts?
- What is the contribution of sediment characters and flux to the ecosystem quality of the river?
- What is the origin of sediments and the associated organic contaminants?
- What are the fluxes of particulate contaminants delivered to the Mediterranean Sea?
- What are the effects of specific events (floods or anthropogenic actions) on the sediment dynamics at the corridor scale, and on the morphology ?
- Can we modelize the sediment transfer processes and fluxes along the whole channel?
- How can we store and share data between scientists and practitioners in order to feed the public debate?

This talk will provide a summary of some of the findings after 6 years of research. Major advances have been done to better characterize and explain the channel evolution of the last century, highlight aquatic and riparian habitat conditions, and assess channel sensitivity to changes. A network of monitoring stations is now operating in order to survey continuously suspended sediment concentrations, and to collect samples for the analyses of trace metal, radionuclides or organic contaminant contents onto particles. Annual quantification of sediment fluxes have been done and are now calculated automatically from a website.

Large events including flash floods and sediment flushing were also monitored at the river scale. Tools and protocols developed for monitoring sediment transfers, archiving data and informing practitioners will be also presented.

Additional informations can be found at:  
<http://www.graie.org/osr/spip.php?rubrique45>