



## **Biogeochemistry, transport fluxes and emission of greenhouse gases from the Ogooué River (west central Africa): preliminary results after two years of monitoring**

François Darchambeau (1), Steven Bouillon (2), Jean-Daniel Mbega (3), Thibault Lambert (1), and Alberto V. Borges (1)

(1) University of Liège, Chemical Oceanography Unit, Belgium (Francois.Darchambeau@ulg.ac.be), (2) Katholieke Universiteit Leuven, Department of Earth and Environmental Sciences, Leuven, Belgium, (3) Institut de Recherches Agronomiques et Forestières du Gabon, Libreville, Gabon

The Ogooué River is the fourth largest river in Africa by discharge. The Ogooué Basin mostly consists of undisturbed rainforest with some savanna grassland. Yet, there is no information on the biogeochemistry, transport fluxes and greenhouse gases in this river. Here, we report initial results of a monitoring campaign whereby 2-weekly samples were collected at Lambaréné (Gabon) [10.24°E 0.69°S] between April 2012 and March 2014 for a suite of physico-chemical and biogeochemical characteristics, including total suspended matter (TSM) concentrations, concentration and stable isotope composition of particulate organic carbon (POC and  $\delta^{13}\text{C}$ -POC) and particulate nitrogen (PN and  $\delta^{15}\text{N}$ -PN), chromophoric dissolved organic matter (CDOM), dissolved organic carbon (DOC and  $\delta^{13}\text{C}$ -DOC), dissolved inorganic carbon (DIC and  $\delta^{13}\text{C}$ -DIC), concentration of greenhouse gases (GHGs) ( $\text{CO}_2$ ,  $\text{CH}_4$  and  $\text{N}_2\text{O}$ ), as well as major elements, total alkalinity, and oxygen isotope signatures of water ( $\delta^{18}\text{O}$ - $\text{H}_2\text{O}$ ). This dataset allows us to construct annual budgets for particulate and dissolved carbon fluxes, nutrient exports, as well as a first seasonally resolved characterisation of the GHGs emitted to the atmosphere by the Ogooué River.