



HAL
open science

Soil erosion and river exports in the Loire river basin

Aurore Gay, Olivier Cerdan, Magalie Delmas, Setareh Rad

► **To cite this version:**

Aurore Gay, Olivier Cerdan, Magalie Delmas, Setareh Rad. Soil erosion and river exports in the Loire river basin. 4th International Congress EUROSIL 2012, Jul 2012, Bari, Italy. hal-00660118

HAL Id: hal-00660118

<https://brgm.hal.science/hal-00660118>

Submitted on 16 Jan 2012

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Soil erosion and river exports in the Loire river basin

Aurore Gay (1), Olivier Cerdan (1), Magalie Delmas (2), Setareh Rad

(1) BRGM, RIS, Orléans, France (o.cerdan@brgm.fr), BRGM, GEO, Orléans, France (3) INFOSOL, INRA Orléans, France

Sediment fluxes within continental areas play a major role in the global biogeochemical cycles and are often at the source of soil surface degradation as well as water and ecosystems pollution. In a context where a high proportion of the land surface is experiencing significant land use and climate change, it appears important to be able to carry out local and regional distributed sediment (and associated particles) budgets to assess potential future impacts induced by such changes. Several research efforts have already investigated either global budgets at the river basin or continental scale or local detailed budget at the plot to the field scale. However, very few studies have tried to analyse the connectivity between fluxes and storages and to draw the links between the different scales. In this broad context, the objectives of this study are to investigate what is the fraction of hillslope production which reaches the oceans (is SDR a relevant concept or do we need to identify dominant processes at each different scale?). These investigations will be based on catchments for which mean annual sediment loads are estimated from measurements at their outlet. The characterisation of the basin properties through spatialised approach should be developed to describe the sediment redistribution processes over the drained areas. Based on sediment budget, the source-to-sink dynamic of the sediment cycle can be examined by considering the redistribution processes within the landscape and the rivers networks.