

At the next Water Dialogue session

Dr. Gilles Pinay*

will speak about

**Coupling air quality, hydrology and biogeochemistry
in complex landscapes**

on Thursday 15 March 2007

at 11 am

in the Gvishiani Room

Abstract

Today, massive alteration of global biogeochemical cycles by humans has forced a more integrated consideration of biogeochemical fluxes from land to water but also between air and water. However, the legacy of separate approaches in atmospheric, aquatic and terrestrial systems hinders attempts to understand biogeochemical phenomena across environments in complex landscapes. For instance, the drainage basin seems a particularly well-suited landscape unit for modelling because of its well-defined boundary conditions. Outputs are relatively easy to measure, and although inputs are complicated by spatial variability, they are nonetheless more straightforward to gauge than many other environmental variables. However, notwithstanding some success in modelling catchments using input-output models, it has in the meantime proved necessary to 'unlock the black box' and examine internal process mechanisms. Similarly, there has been a tremendous effort on modelling present air quality and to forecast its evolution. Yet, interactions between air and water quality are mostly neglected despite their tremendous importance in terms of greenhouse gas emission and eutrophication processes.

The objective of this presentation is to illustrate some of these above-mentioned challenges and propose ways to address them, using the nitrogen cycle as an example.

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