



Hydrological and geopedological dynamics of a forested slope

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Though forested watersheds are really particular in terms of hydrodynamics, most of the hydrological models oversimplify the phenomena involved. More investigations are unavoidable to improve the knowledge and the modelling of this environment. Here is the aim of this study.

The studied slope is located on the Houille watershed in the West of the Belgian Ardenne ($50^{\circ}1'47''N$, $4^{\circ}53'22''E$) on a silty rocky soil. The site is situated under a Douglas fir (*Pseudotsuga menziesii* (MIRB.) FRANCO) and spruce stand cover (*Picea abies* (L.) Karst). It is about 160 meters long with a North-West facing slope between 7 and 55%.

The goal of the study is :

- to characterise the hydrological and pedogeological dynamics along a forested slope,
- to compare these dynamics with the tree growth.

For the geopedological part of the study, eight pits were dug to describe the soil and take some soil samples used for granulometric, chemical, etc. analysis. We have used geophysical methods (Electrical Resistivity Tomography and Ground Penetrating Radar) to estimate the soil depth.

As for the hydrological part of this study, moisture sensors (capacitive and TDR) have been installed in the pits along the slope. A dye tracing test has been performed to underline the preferential flow and the importance of the subsurface flow.

Several trees have been equipped with dendrometers and some measures of the LAI and the height of the trees are planned.

The poster will present the first results of these investigations.