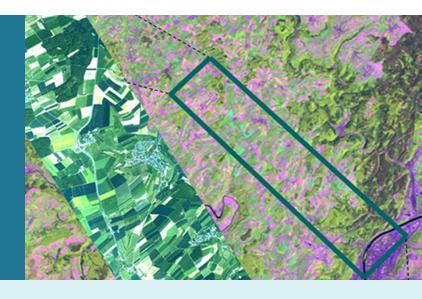# PROJECT FACTSHEET

CAOS

From catchments as organized systems to models based on dynamic functional units

CONTEXT

The aim of the project is to bring together researchers from many complementary domains around a common objective. The research unit created for this purpose (DFG-Forschungsgruppe) aims to develop a new framework for the implementation of hydrological models for the purpose of a better representation of the surface and subsurface architecture of meso-scale watersheds (from 10 to 200 km^2). To reach this objective, the project is striving to bring together:

- the most recent observation and exploration technologies in the fields of soil physics, geophysics, remote sensing and hydrology;
- an understanding of the formation of landscapes and of soil development;
- perceptual and mathematical models as learning tools for the purposes of the evaluation and interpretation of new information obtained with regard to surface and subsurface structures, and also to the dynamics of distributed processes.

This project's key objective is to develop a model and mathematical framework that, in the end, will allow for better integration of this information into the model's identification process, while also consequently improving the dialogue between experimentalists and modellers. All of the works will be carried out in the Attert basin, which has been equipped with measurement apparatus since 2003.

RESULTS

The experimental hydrology work was extended to the entire expanse of the Attert catchment area. Considerable measurement equipment was installed in order to measure the various components of the water cycle (e.g. meteorological stations, liquid level reporters, automatic samplers). As a supplement to these experimental hydrology works, a flexible development framework of concepts for hydrological models was developed. It will be used for interpreting the various components of the rain-flow conversion seen in the field. In view of the exceptional quantity of data generated during the project, a dedicated database was set up. This tool uses the CUASHI (Consortium of Universities for the Advancement of Hydrologic Science) hydrological information system that was specifically developed for the management and sharing of hydrological data.

Partners

Helmholtz Centre Potsdam (DE) , Ludwig Maximilian University of Munich (DE) , Karlsruhe Institute of Technology (DE) , Max Planck Institute for Biogeochemistry Jena (DE) , Technische Universität München (DE) , University of Freiburg (DE) , University of Hohenheim (DE) , University of Potsdam (DE)

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Contact

5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
phone: +352 275 888 - 1 | LIST.lu

Dr habil. Laurent PFISTER (laurent.pfister@list.lu)
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