

HYDROGEOLOGY OF PERI-ALPINE AQUIFERS: THE HOFMATT-SODBACH SYSTEM, CANTON FRIGOURG

Context and objectives

Groundwater resources on the Swiss Plateau are under increasing pressure from intense land-use. This has led to an increasing interest for groundwater resources in peri-alpine regions with a less intense land-use. However, such systems are usually characterized by a higher geological complexity and at the same time have often been less studied than major aquifers on the Swiss Plateau. The main aim of the study is to improve the current understanding of the functioning of an important groundwater system in the Canton of Fribourg, the Hofmatt-Sodbach system with very productive artesian springs. More specifically, the main objectives are to characterize the geometry of the aquifer in more details and investigate recharge processes feeding the very productive system.

Research approach and methodology

The project will include extensive fieldwork. The characterization of the aquifer geometry will rely on geophysical methods mainly electrical resistivity measurements. The study on recharge mechanisms will likely focus on the contribution of Sense river to groundwater recharge. The gravels that likely constitute the aquifer outcrop along this river. Hydrochemical and isotope methods will be used to evaluate the contribution of the Sense to discharge at the spring. In addition, it will likely be possible to install monitoring wells along the river and investigate groundwater recharge based on the response of these monitoring points to discharge measurements in the Sarine.

Partners and collaboration

The project will be carried out in close collaboration with the Service de l'Environnement (Secteur Eau Souterraines et Eau Potable) of the Canton de Fribourg, which has proposed the study. A consulting company that has a mandate from the Canton will be involved as well.

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