



## **intercomparison test of groundwater dating methods: proposition for an international test in French Brittany (France)**

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Groundwater dating methods are useful to investigate aquifer functioning and to groundwater resource management (quality and quantity). Numerous dating methods exist and cover a wide time span from paleo waters (10Ky or more) to recent waters (<10 years). These methods are mainly based on isotopes of Cl, H, He, C, Kr and Ar. Other methods are based on anthropogenic gases compounds like  $^3\text{H}$ , CFCs,  $\text{SF}_6$  or  $\text{SF}_5\text{CF}_3$ . It is well known that these methods do not necessarily provide similar in formations.

All these methods are very sensitive and need a great analytical experience in order to obtain accurate results. A cross analytical exercise can be of great interest to laboratories in order to evaluate their analytical system. We propose to research labs to participate to a common exercise of groundwater dating. This exercise has two goals: 1) to compare analytical values for similar methods in different labs, 2) to compare and discuss various dating methods.

The intercomparison test will be carried out in a small watershed which constitutes a research observatory from 2004. This small shist aquifer presents a saline and old groundwater at 80m-depth. Nitrate-rich and young ground waters are encountered in the shallowest part of the aquifer. A chemical database is also available on the 8 piezometers of the site since 2004.

Sampling might be carried out by the Geosciences Rennes team. Analytical results will be treated anonymously and dispatched to all participants. We also propose to organize a workshop (GDAT 2012) where these results will be presented and discussed in Rennes in 2012.