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GDAT intercomparison exercice on CFCs and SF6 tracers for groundwater dating

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Two intercomparison exercises have been carried out in 2012 by the hydrogeochemist community : Fontainebleau sandy aquifer (January 2012) and Betton fractured shists aquifer (October 2012). Environmental tracers devoted to groundwater dating were compared during these experiments.
These methods are very sensitive and need a great analytical practice to obtain accurate results. The GDAT exercise was designed in order to compare methods and analytical protocols. All the participants sampled groundwater from the same boreholes at the same time using similar sampling methods, and analysed similar environmental tracers using for each laboratory its own analytical protocol.
We here present CFCs and SF6 results obtained on the Fontainebleau aquifer and on the Betton aquifer. The first one shows quite “old” CFC waters and the second one “younger” CFCs waters.
The intercomparison exercise brought together 31 laboratories from 14 countries including 12 laboratories for CFCs analysis and 11 for SF6 analysis.
Results show good agreement for most of the laboratories with apparent uncertainties less than 3 years on the quite “old” CFCs waters. The major uncertainty source results from sampling and storage methods.