



Leveling network for surface deformation along Soultz-sous-Forêts and Rittershoffen geothermal sites, France.

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ABSTRACT

In order to monitor the surface deformation around the two geothermal exploitation sites at Soultz-sous-Forêts and Rittershoffen, France. We established a high precision leveling network in May 2014. A large leveling networks (about 38 km) surrounding the two sites was observed in May 2014. A small loop (about 3.5 km) around the Rittershoffen site was measured several times in May, June and July 2014. This network is monumented by 43 leveling benchmarks, some of these markers are located close to relative gravimetric sites or some permanent cGPS antennas.

1. LEVELING NETWORK

The leveling network is made of five loops (figure 1). Each loop was observed using a digital level (Leica DNA03) and standard leveling staff. The leveling lines include some National leveling benchmarks installed by the French Mapping Agency (IGN, Institut National de l'Information Géographique et Forestière) in order to tie the altitudes to the national reference. The loop 5 was observed several times using the same digital level, but this time using invar staffs. By fixing the altitudes of three leveling benchmarks at IGN values, we computed the altitudes of all other benchmarks. Uncertainties on these altitudes is about 2 to 5 mm. We plan to re-observe this network in May 2015.

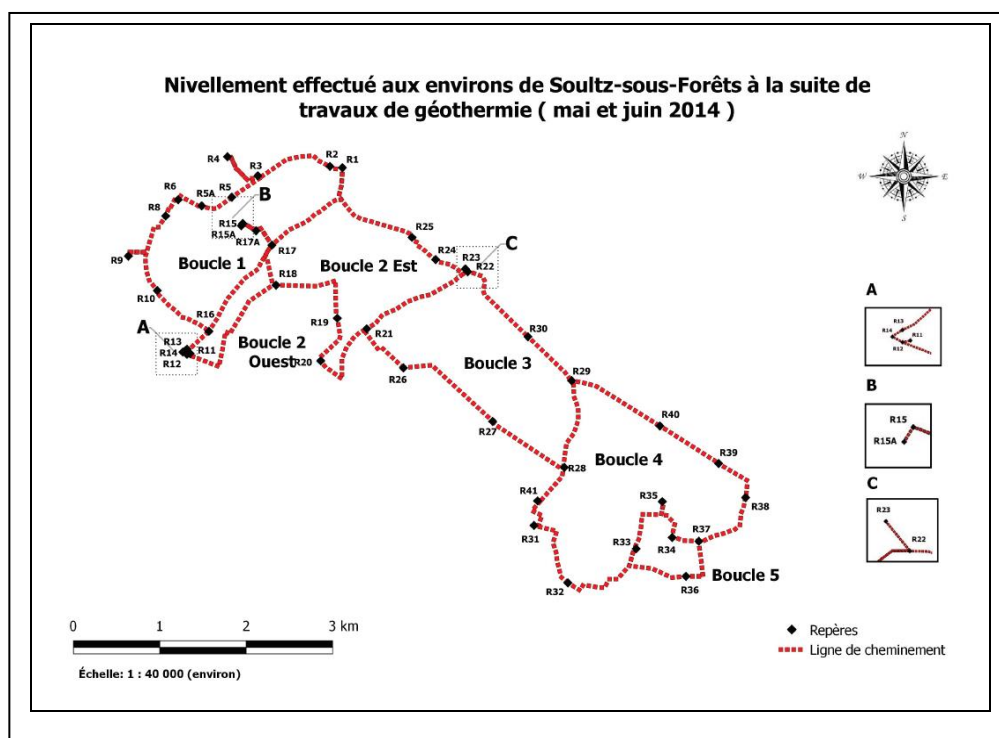


Figure 1: Leveling network installed in May 2014 around Soultz-sous-Forêts and Rittershoffen sites, France.