



Setting the baseline before geothermal exploration begins: the search of microseismic activity in the Geneva Basin, Western Switzerland

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Switzerland is moving towards the development of renewable energies. Following this trend, SIG (Services Industriels de Genève) and the Canton of Geneva is investing in the exploration of geothermal energy. Before the exploration takes place it is crucial to understand the rate of seismic activity in the region and its relationship with the existing faults.

Historical and instrumental times suggest the presence of active faults in the region but to date little is known about the seismic activity in the Geneva Basin. Tectonic maps show the presence of major faults crossing the basin and recent seismic events indicate that such systems are still active on a regional scale. However, available data indicate infrequent and dispersed activity. This can be partially due to the small number of permanent stations in the area.

To understand where micro-seismic activity may be located around and within the Geneva Basin we have deployed a temporary network composed of 20 broadband stations. With the densification of the network it could be possible to capture and localise small magnitude seismic events (i.e. M less than 1). Here we present the preliminary results obtained during the first months of the temporary network deployment.