



## **Ambient-noise tomography of the Geneva basin in a geothermal exploration context**

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Switzerland is strongly promoting the development of geothermal energy extraction from low- to high-enthalpy resources. However, there are still several uncertainties regarding feasibility and associated costs given our little knowledge of the local conditions at depth. One of the main issues preventing the broad development of geothermal energy exploitation is the high cost of geothermal exploration compared to the expected economic benefits.

Affordable passive seismic methods may provide valuable information about the geological structures targeted for geothermal energy extraction. Here, we present results from an ambient seismic noise tomography of the Geneva basin obtained from one year of continuous seismic records on a 20-station temporary network. We describe the obtained S-wave velocity model of the basin and provide interpretations in relation with other collected geophysical data. We discuss the benefits of this unconventional technique for geothermal exploration purposes.