ECOLE LEMANIQUE DES SCIENCES DE LA TERRE
DES UNIVERSITES DE GENEVE ET DE LAUSANNE

Master of Sciences in geology

Sedimentary Volcanism in Azerbaijan, a geophysical approach.

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Context

Azerbaijan features the most spectacular examples of onshore sedimentary volcanism. Mud volcanoes are open conduits on deep-seated geological units often hosting hydrocarbon reservoirs. For this reason mud volcanoes are studied with classical geological and geochemical approaches. However, to date little is known about the architecture of the plumbing system of such structures. Electrical Resistivity Tomography (ERT) methods have been used to investigate a wide variety of scientific problems such as hydrogeological and environmental studies (Binley et al., 2002; Naudet et al., 2004; Revil et al., 2013), characterization of tectonically active areas (Caputo et al., 2003; Suski et al., 2010; Vanneste et al., 2007), and mud eruptions (Bessonova et al., 2012; Lupi et al., 2016; Sawolo et al., 2009; Zeyen et al., 2011). This project will use ERT methods to shed light on the architecture of selected mud volcanoes in Azerbaijan.

Objectives and Methods :

This master aims at studying Azerbaijani mud volcanoes with ERT methods.

The progression of the study will be the following:

1) Literature analysis
2) ERT survey and fluid sampling
3) Data treatment, including geoelectrical inversion and integration of available geological and geochemical data

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Choice of orientation : RGEOL, SERG, GATO

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