



Contribution ID: 119

Type: poster

## Geophysical imaging and characterization to study the implementation of the Einstein Telescope infrastructure

*Thursday, 20 May 2021 16:01 (1 minute)*

The Einstein Telescope (ET) is a third generation gravitational wave observatory, currently in the planning stage in Europe. The ET project involves the construction of a triangular shape underground facility with 10 kilometres long arms buried in ca. 250 m depth. At the corner points, large caverns host the required infrastructure. The border region between the Netherlands, Belgium and Germany is considered a potential location and is investigated in a multidisciplinary feasibility study, E-TEST, funded by the EU and various authorities of the involved countries.

E-TEST aims to construct geological, hydrogeological and geotechnical models of the potential ET area. Sub-surface data are crucial to develop these models. Several geophysical methods allow to collect these data from various depth ranges in different resolutions. Planned geophysical surveys are (I) ERT / IP measurements and (II) active seismic surveys using a sledge hammer to map the shallow subsurface, (III) active seismic surveys using vibro-seis trucks and (IV) passive seismic surveys using naturally occurring seismicity to image the shallow and deep subsurface. 5 dry boreholes hosting seismometers will be drilled. Geophysical logging of these boreholes will take place prior to installation. The combination of all these geophysical data acts as a solid base for the subsurface models of the E-TEST area. The presentation at GWADW2021 provides an insight on the geophysical surveys conducted in the E-TEST project.

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**Session Classification:** Poster session 2

**Track Classification:** Next detectors: Third generation infrastructures