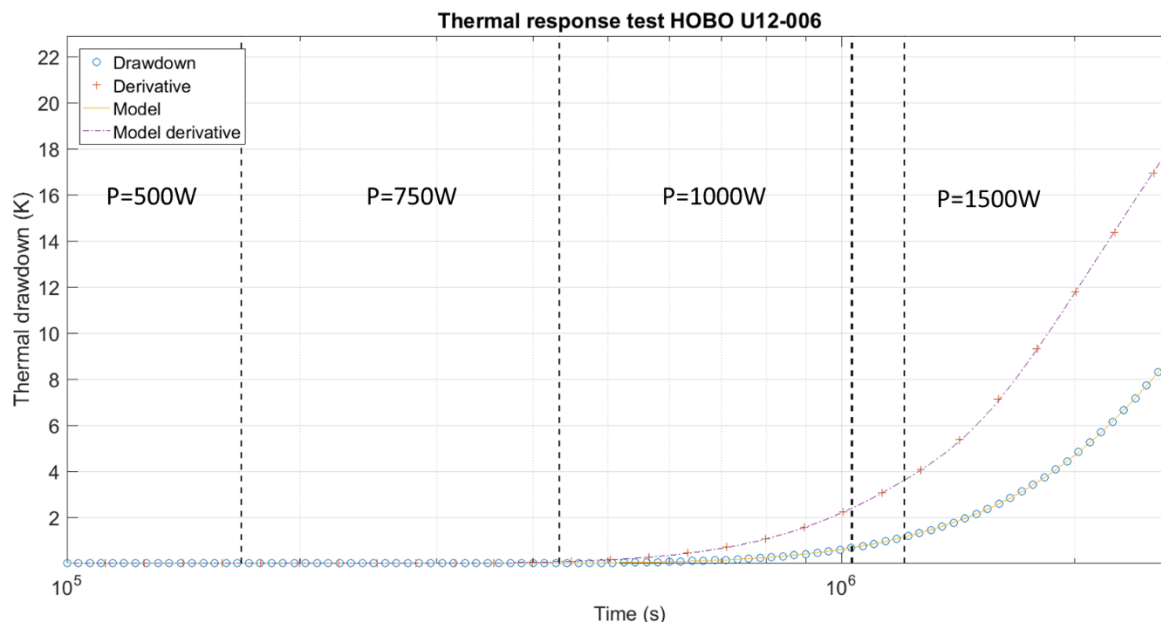


Interpretation of a thermal response test in Argentina

Client: HOBO

Keywords: Thermal response test, site characterization, model calibration, geothermal



Summary: Thermal response test (TRT) is used to determine the thermal properties of the ground. There is no direct way to measure the ground thermal conductivity and the borehole thermal resistance. These tests are vital for designing ground source heat pump and seasonal thermal energy storage (STES) systems. A TRT is an indirect (in-situ) measurement method which is the simplest and most exact way to determine the effective thermal properties. Before the test is started the undisturbed ground temperature must be determined. This can be measured in various ways e.g. by temperature loggings of the borehole or by measuring the temperature of the circulated water through the borehole without heating over 20–30 minutes. The mean fluid temperature corresponds to the undisturbed mean temperature along the borehole. The next step is to switch on the heater and the monitoring system. During the test, the heat transfer into the ground surrounding the borehole is essentially radial and relatively constant along the borehole. The test was interpreted using the software Hytool.