

ADAPT Active Layer Monitoring standard protocol

In remote ADAPT sites where drilling is logistically difficult, ADAPT has developed an alternative and affordable protocol to monitor the active layer. The temperature sensors are the Decagon RT-1 and the sensor for soil moisture is the 5TE from Decagon Devices. The complete specifications of these sensors available at www.decagon.com/. The five sensors are linked to the EM50 data logger.

The decagons are installed in one of the 6 soil pits, which is chosen according to the geomorphological surficial deposit unit that is the most representative of the surrounding area and observed ground characteristics. Temperature sensors in the ground are distributed at the following depths: -5 cm, -15 cm, -30 cm and at the maximum depth the soil can be dug (see Figure 1 for decagon layout).

The snow/vegetation cover temperature is measured with a temperature sensor placed at 20 cm above the ground is deployed within a PVC tube (diameter of ½ inch). The 20 cm PVC tube is topped with «T» fitting to allow for air circulation. The temperature sensor is installed in one of the «T» fitting openings so that it is in contact with the snow.

A soil moisture sensor TDR (5TE- soil Volumetric Water Content- VWC) is placed at 5 cm below the surface. Note that all temperature sensors (RT-1) noted in this layout can be replaced by soil moisture sensors, which also record temperature.. However, this option is significantly more expensive.

All sensors are plugged to the datalogger (EM50) which is placed in a plastic box (20 x 20 x 40 cm) that is buried just below the ground surface, about 50 cm from the hole where the sensors are deployed.

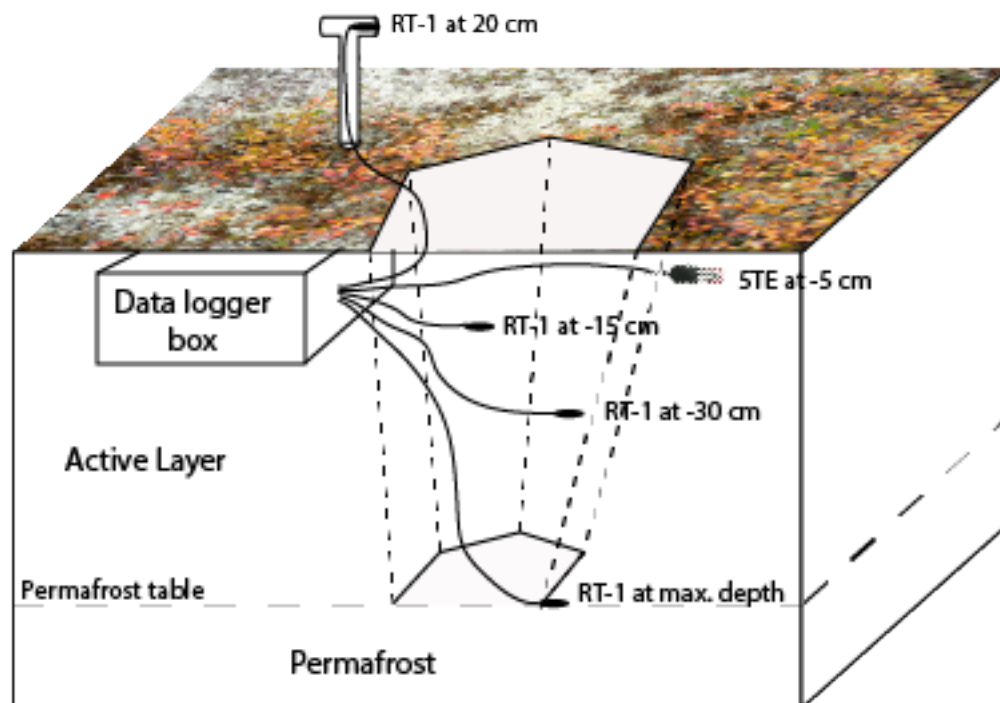


Figure 1. Layout of the ADAPT Active Layer monitoring standard protocol.