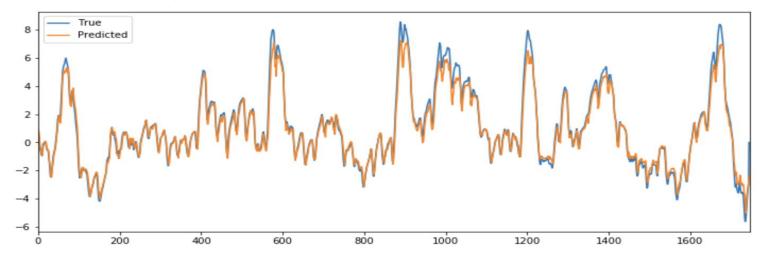# Deep-Voltage

Goal
Predict the difference in temperature inside the rock based on easy measurable KPI for the next coming hour

Motivation: Modulate sampling rate of the instrument based on hourly temperature prediction.
Benefit:
   Save the energy by switching off during silent time spans
   Reduce the amont of data to be collected and analyzed
Current status: adaptive models RMSE = 0.9
Our model (LSTM) RMSE = 0.48

Inputs
temperature_5cm [°C],
temperature_10cm [°C],
temperature_20cm [°C],
temperature_30cm [°C],
temperature_50cm [°C],
temperature_100cm [°C],
wind_speed_average [km/h],
net_radiation [Wm^-2], season

Model

LSTM

Target

Delta T (1h)