Soil property characterization based on temperature signals

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What I want to do is characterize the thermodynamic properties of soil by measuring temperature signals at two locations, using thermal sensing signals, and the physical model I have developed, as shown in a previous article of mine. It is based on the heat conduction partial differential equation.

I aim to integrate this characterization method into a digital twin. The method includes (a) signal acquisition, (b) signal processing, and (c) physical model inversion. Recently, I have also been working on AI-based inversion models.

