



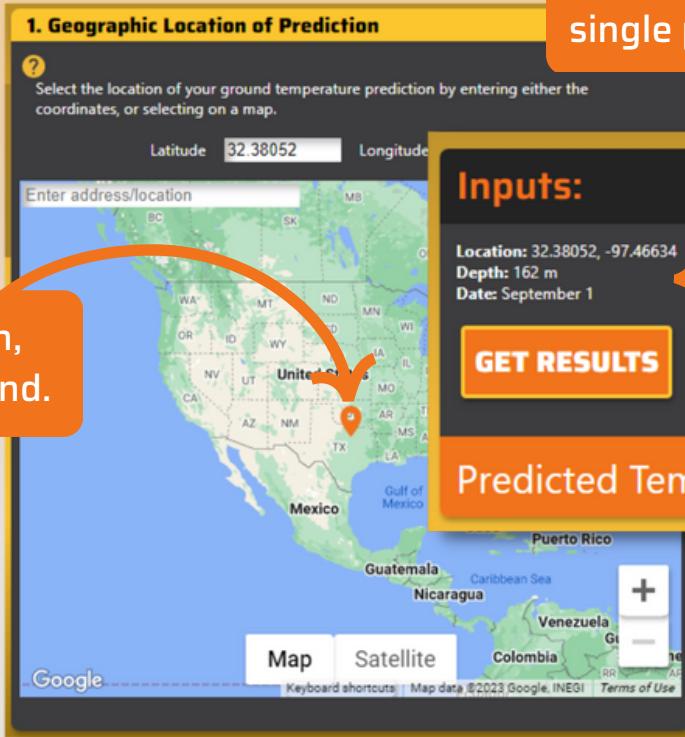
Ground Temperature Predictor

DEMO

groundtemperatures.com

Choose depth and date for single point predictions.

Select a location, anywhere on land.



Inputs:

Location: 32.38052, -97.46634
Depth: 162 m
Date: September 1

GET RESULTS

Predicted Temperature: 23.28°C

Get AI predicted point temperature in seconds.

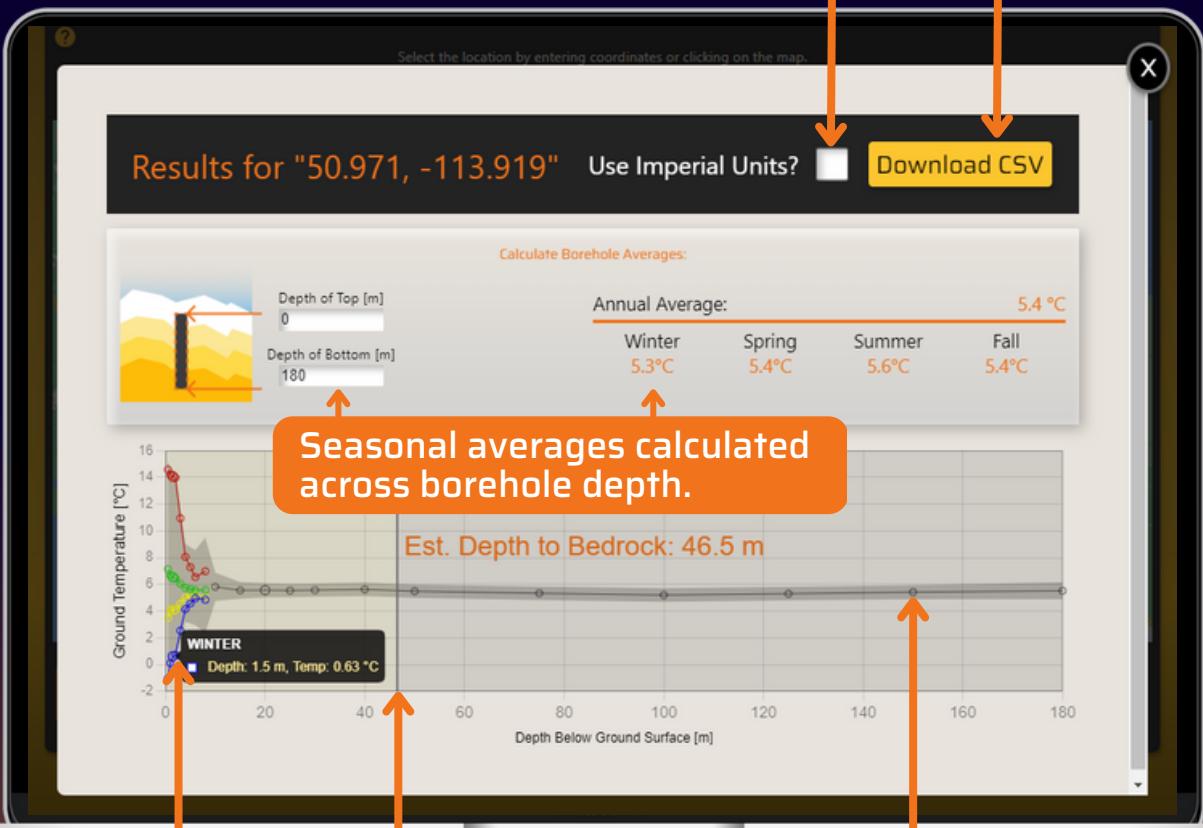
NEW FEATURE

Borehole Mode:

Get AI predicted vertical temperature profiles in minutes, just by selecting a location.

Automatic unit conversions.

Download all result data.



Seasonal averages calculated across borehole depth.

Temperature profiles from over 70 predicted points.

Includes AI predicted depth to bedrock from SoilGrids.

Upper and lower bounds with standard error by depth.



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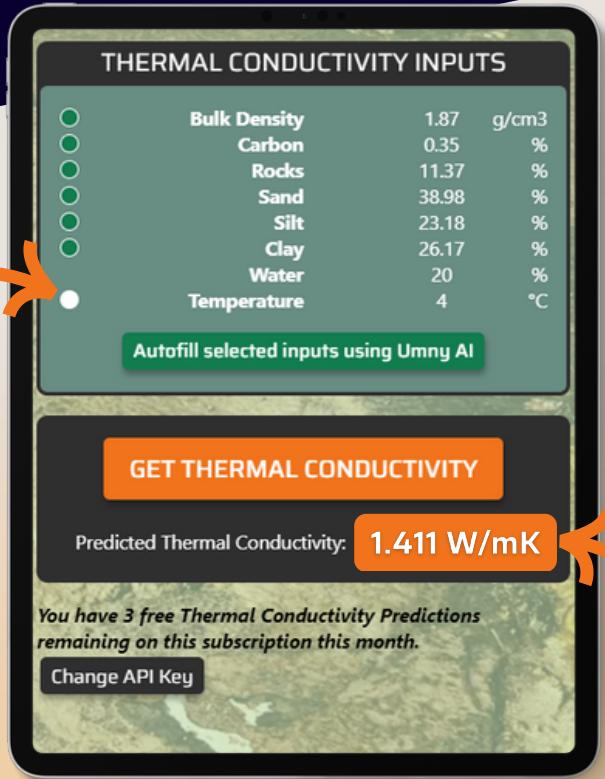
Soil Thermal Conductivity & Geotech Predictor

soilconductivity.com

DEMO



Input or predict geotechnical details with AI.



Automatic integration of ground temperature predictor (GTP).

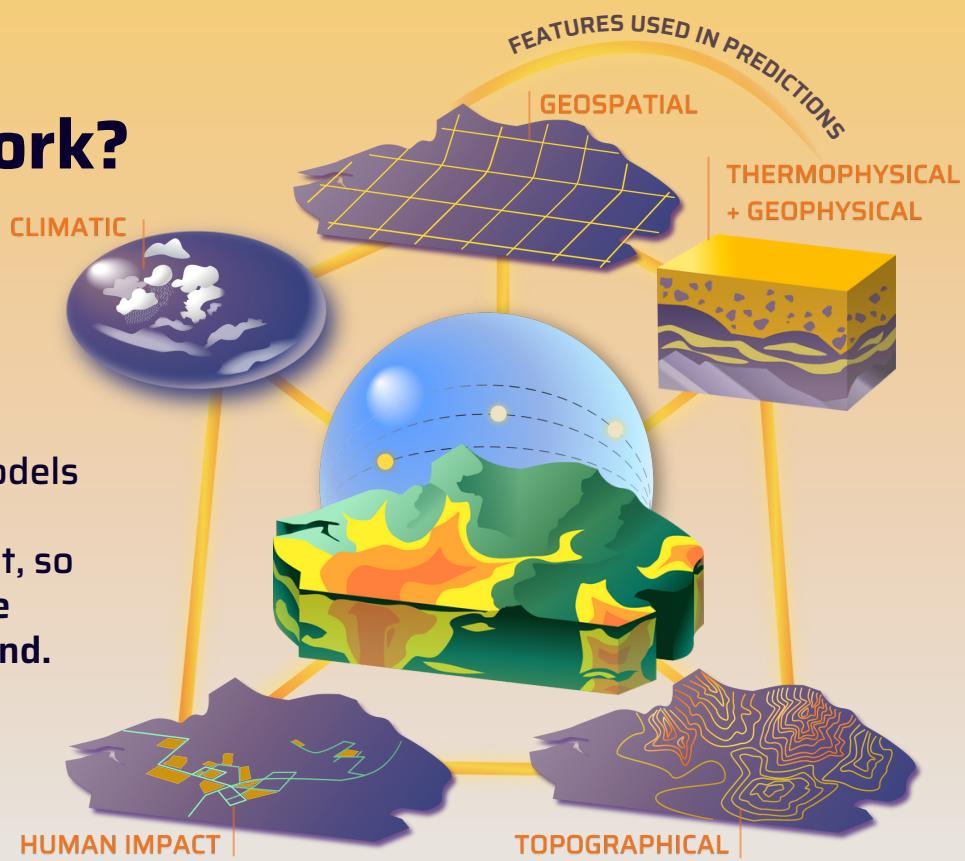
Get AI predicted thermal conductivity in seconds.



How does it work?

We have collected millions of real-world measurements to teach our AI about the earth.

Our custom physics + AI models are trained to recognize patterns in the environment, so they can predict geoscience info, anywhere below ground.



WATCH



How well does it work?

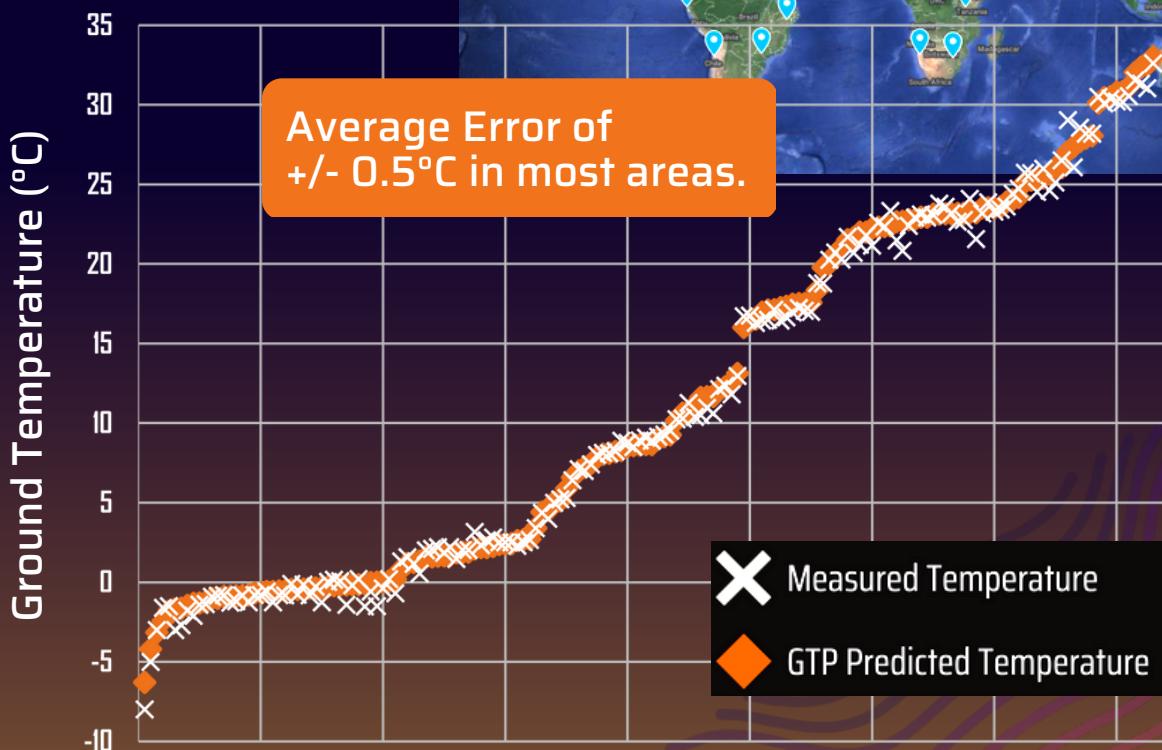
We validate our AI models with high quality real-world measurements from scientists around the earth.

READ



Ground Temperature Predictor (GTP) Validation

Version 1.0 was tested against over 300 measurements.



Validation Study



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Soil Thermal Conductivity (SoK) Validation

[READ](#)

Version 1.0 was tested against best calculation methods.

Comparison of SoK prediction RMSE values with analytical models from [1], for two bulk density groups and varying saturations.

Saturation %		COTE & KONRAD.	LU ET AL.	BALLAND & ARP	SOK
FINE-GRAINED SOIL	SAT. < 10%	0.081	0.057	0.071	0.058
	10% < SAT. < 20%	0.106	0.080	0.078	0.051
	SAT. < 20%	0.133	0.128	0.147	0.089
	0% < SAT. < 100% (ALL DATA)	0.122	0.113	0.130	0.081
COARSE-GRAINED SOIL	SAT. < 10%	0.157	0.172	0.213	0.114
	10% < SAT. < 20%	0.167	0.189	0.122	0.129
	SAT. < 20%	0.205	0.195	0.164	0.107
	0% < SAT. < 100% (ALL DATA)	0.172	0.182	0.186	0.114

On average SoK predictions are 32% more accurate than other methods.



[1] READ ORIGINAL PAPER WITH COMPARISON METHODS

Accurate, fast, & easy-to-use apps for:

- Pre-drilling info for better costing, planning, and sizing of equipment
- Finding new resources, such as low-temperature geothermal sites
- Validating physical measurements with accurate AI predictions
- Understanding ground freezing depth and melting risks, especially in permafrost
- Quantifying human/technology impacts on ground temperature (ie. from cities)
- And much more!



Who are we?

Umny Inc.
(oom-knee)

We are specialized to model the complicated physics of the ground.

UMNY.CA



Speaking:
English, French,
Spanish, Arabic

22 Years Experience

Working in engineering (research & consulting) for geothermal, computer programming, construction, and soil science for regenerative agriculture.



Master's and PhD in
Computational Fluid
Dynamics (CFD).



Interested?

Try it out free or subscribe:



groundtemperatures.com

Ground Temperature
Predictor

PRICING



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Soil Thermal
Conductivity App

PRICING



Contact us about custom pricing, and to hear about our next version release with even more ground properties.

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Software to explore the earth.