ESTIMATION OF GEOTHERMAL POTENTIAL OF VOLCANIC ZONES

MARENOSTRUM5 GPP

Led by

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1 WHY DOES GEOTHERMAL ENERGY MATTER?

Geothermal energy is a renewable, continuous and low-carbon source of electricity

Magma in volcanic regions can provide **a lot of energy**, but finding the right place to drill is **costly** and **uncertain**

The key is **knowing where to drill** before actually doing it

THE CERRO BLANCO VOLCANIC COMPLEX

2

Cerro Blanco (Argentina) is one of the **most active volcanic systems** in the Andes, but the hints **at the surface are really weak**

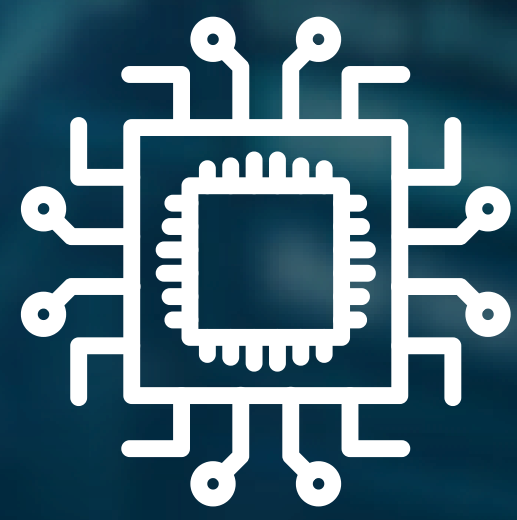
These features make it an **ideal scenario** for developing and **testing methods** to find where to drill.

Images of the complex in the next slide

3 THE ROLE OF HPC RESOURCES

The team created **advanced 3D models** that mimic how the fluid and the heat move **under the surface**

These simulations are **very complex**, so HPC resources have been essential to **explore different scenarios** and precisions in a reasonable time



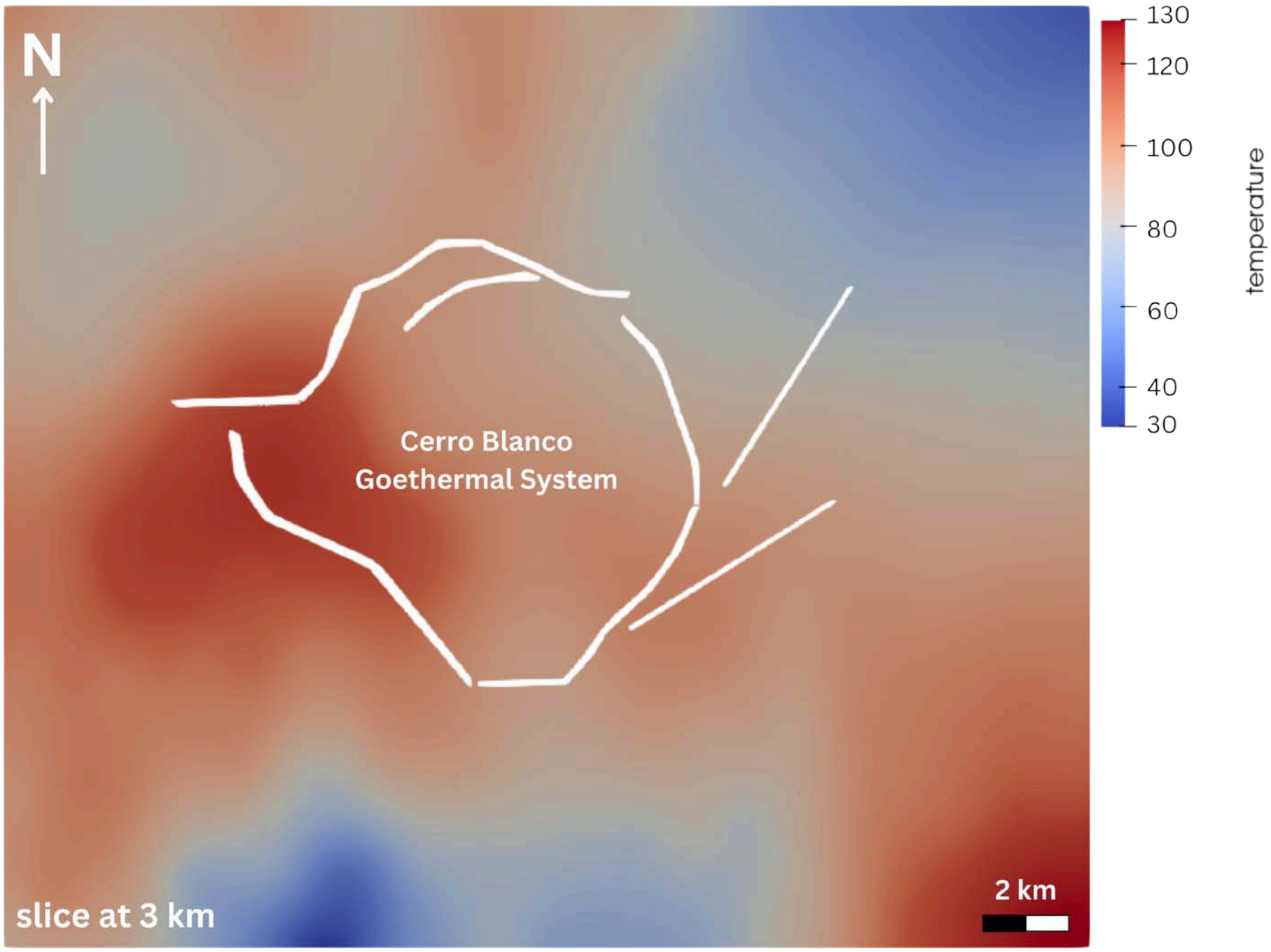
A NEW WAY TO MODEL VOLCANIC ZONES

4

They developed a reproducible **3D thermo-hydraulic modelling tool** that can reproduce realistic parameters in complex volcanic settings

They are also preparing to **apply it to other volcanic regions** like La Palma (Spain), in collaboration with GEO3BCN (CSIC)

SOON



Representation of the underground temperature (3km depth) of the Cerro Blanco volcanic system

INFRAESTRUCTURAS CIENTÍFICAS Y TÉCNICAS SINGULARES

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