Global Heat Flow Database – A look of LATAM area

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Following five years of coordinated international efforts, the International Heat Flow Commission (IHFC) and Task Force VIII of the International Lithosphere Program (ILP) are pleased to present the inaugural Global Heat Flow Database (GHFDB), which is fully quality-controlled and authenticated. This database represents a significant advancement in the accessibility and reliability of global heat flow data, which is essential for geothermal exploration, resource evaluation and lithospheric modelling.

The GHFDB integrates data from over 1,700 publications dating from 1939 to 2025, employing standardized data formats, rigorous quality assessment procedures, and consistent metadata structures. The result is a robust, traceable dataset that significantly increases confidence in estimates of heat flow density, thermal conductivity, geothermal gradients and their associated metadata.

For the first time, the scientific community and the geothermal industry have access to an open-access, globally harmonized, quality-scored database of surface heat flow density distribution containing over 120,000 heat flow data points from around 85,000 locations, including both continental (55%) and marine (45%) settings.

The GHFDB brings together 85 years of scientific work, achieving high data densities in regions such as Europe, East Asia, Australia, and North America. However, data remains scarce in Polar Regions, wide marine areas and many African countries. The release 2024 include 54,553 continental data and 36,692 oceanic. In LATAM area the GHFHB have 91,182 data.

This presentation outlines the framework and methodology behind the development of the IHFC GHFDB, demonstrates key applications in geothermal resource characterization, and highlights opportunities for integration with other geoscientific data infrastructures. The GHFDB sets a new benchmark for geothermal data quality and accessibility. We invite researchers, industry professionals, and data providers to explore this resource and contribute to shaping the next phase of global geothermal and geodynamic research.

GHFDB Release2024

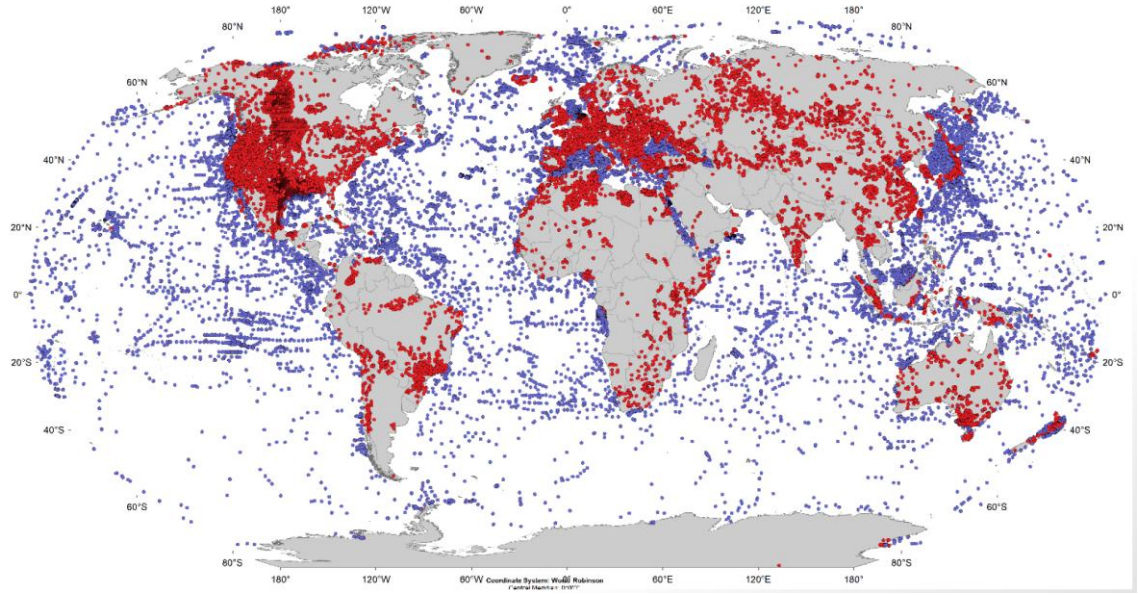


Figure1. Global Heat Flow Data Assessment Group(2024): The Global Heat Flow Database: Release 2024. V. 1. GFZ Data Services. Doi: https://doi.org/10.5880/fidgeo.2024.014

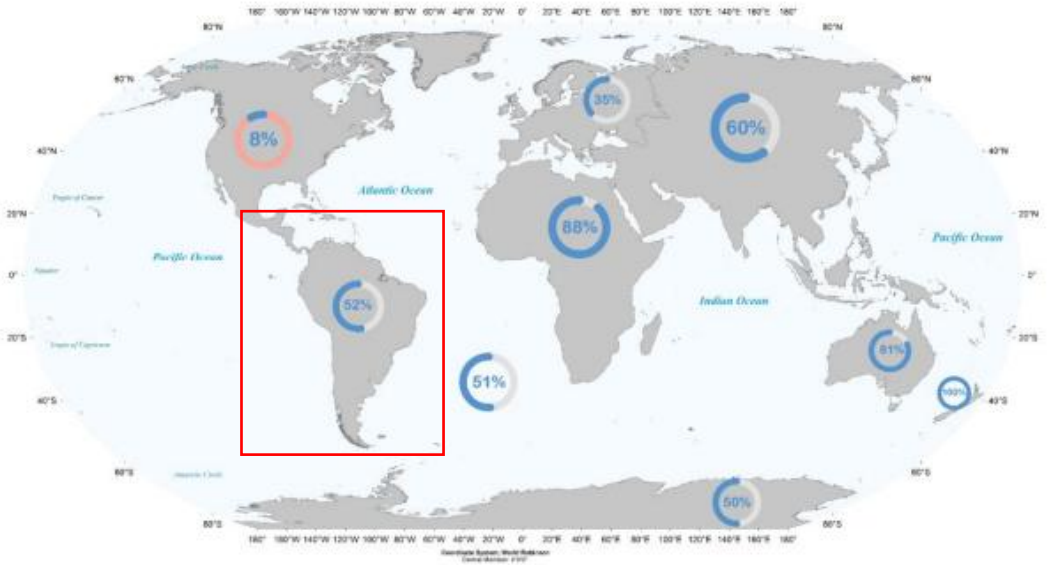


Figure 2: Assessment rate. Blue segments are assessed data rate; red segment is open to review for North America. Red polygon delineated the LATAM area.

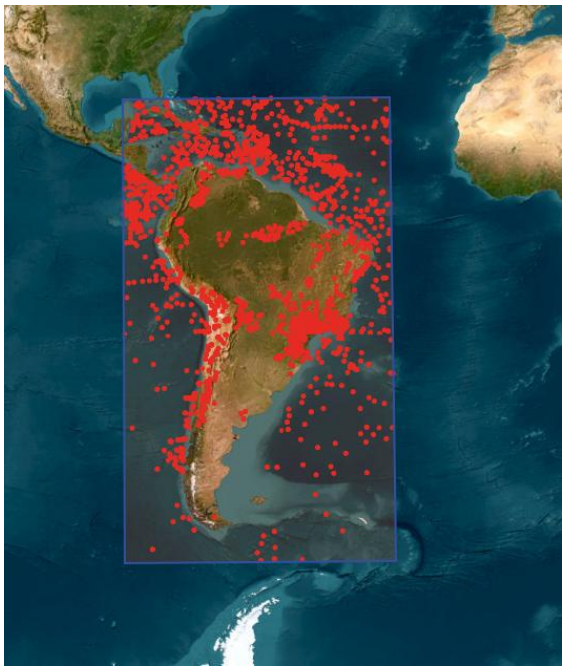


Figure 3: Emphasis for the GHFHB in LATAM region.