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INTERROGATING THE PAST TO BETTER UNDERSTAND THE FUTURE

In the study of past climates, one of the least known energy reservoirs is that of the energy stored in the upper layers of the continents. Research, published by StFX's Earth Sciences professor **Dr. Hugo Beltrami** in collaboration with several colleagues, has made an important contribution to understanding the quantity and nature of the heat absorbed by the continental areas. Their paper was chosen as a journal highlight by the European Geosciences Union in 2014, providing the first estimate of the impact of the development of the Laurentide ice sheet on the estimates of energy and temperature reconstructions from measurements of terrestrial borehole temperatures in North America. The paper explains that reconstructions of past climatic changes from geothermal data are important and independent estimates of temperature histories over the last millennium. The research team also points out that multiple uncertainties remain in the interpretation of these data as climatic indicators and as estimates of the heat storage of the continental subsurface in response to long-term climatic change. In their article, the authors also presented quantitative estimates of the potential effects of temperature changes during the last glacial cycle on the paleoclimatic reconstructions over the last millennium for North America. Their results pointed to discrepancies, as much as 50 per cent of previous estimates of the continental heat change in North America when the effects of the last glacial cycle are not taken into account.