



Impact of the Last Glacial Cycle on recent borehole temperature profiles: implications for terrestrial energy balance

Dr. Gurpreet Matharoo

Department of Earth Sciences, StFX

Reconstructions of past climatic changes from borehole temperature profiles are important independent estimates of temperature histories over the last millennium. There remain, however, multiple uncertainties in the interpretation of these data as climatic indicators and as estimates of the changes in the heat content of the continental subsurface due to long-term climatic change. One of these uncertainties is associated with the often-ignored impact of the last glacial cycle (LGC) on the subsurface energy content, and on the estimate of the background quasi steady-state signal associated with the diffusion of accretionary energy from the Earth's interior.

Here, we provide 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.

Results indicate that site-specific heat content estimates over North America can differ by as much as 50 %, if the energy contribution of the last glacial cycle in those areas of North America that experienced glaciation is not taken into account when estimating recent subsurface energy changes from borehole temperature data.

Read full abstract on StFX Events at <http://www.stfx.ca/events/view/16191/>

All are welcome.

Monday, February 2nd, 2015

12:15 -13:05

Physical Sciences Centre 2045