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Heat flow beneath Greenland: implications for Northeast Greenland and whole-ice-sheet response

Observations of high heat flow beneath Greenland (an old and relatively stable craton) are puzzling. In parts of the island, heat flow of up to 1 W/m^2 have been estimated (comparable to Yellowstone!) with likely significant associated melt at the base of the Greenland Ice Sheet. This melt appears to be concentrated at the head of a fast-flowing ice stream (the NE Greenland Ice Stream or NEGIS). This anomalous heat flow has implications for that ice stream and possibly for the flow dynamics of the whole ice sheet. Here I discuss observations at NEGIS on a local scale (reflection seismic and radar) and throughout Greenland from the incomparable GLISN seismic network.