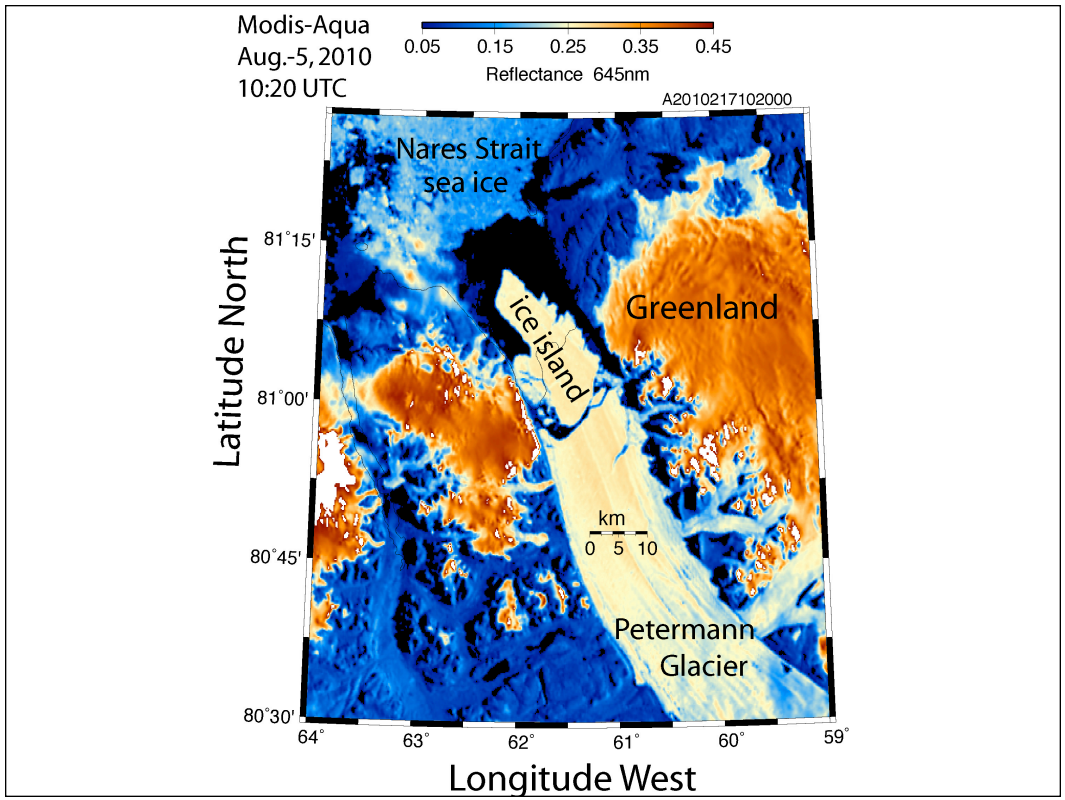
Dr. Müenchow

Petermann Glacier Briefing

U.S. House Select Committee on Energy Independence and Global Warming

10 August 2010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Aug.-5, 2010
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Reflectance 645nm
A2010217102000
Nares Strait
sea ice
ice island
Greenland
km
0 5 10
Petermann
Glacier
Latitude North
81˚15'
81˚00'
80˚45'
80˚30'
64˚
63˚
62˚
61˚
60˚
59˚
Longitude West

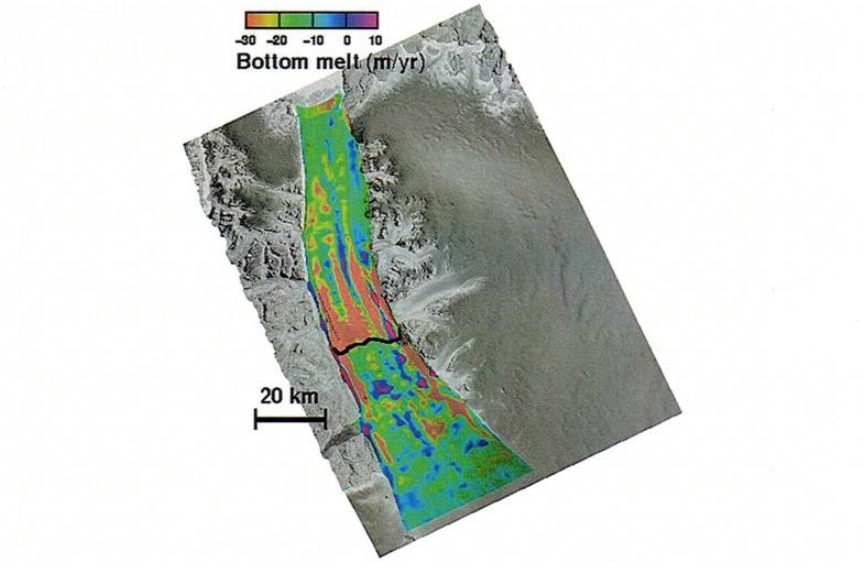

Figure 2. Petermann Glacier steady-state bottom melt rate in m/yr calculated on a 600-m grid from the divergence in ice flux. Values above the grounding line (thick black line) are affected by large errors due to sparse ice thickness data (Figure 1). On the ice shelf, ice thickness is better constrained by surface elevation data.

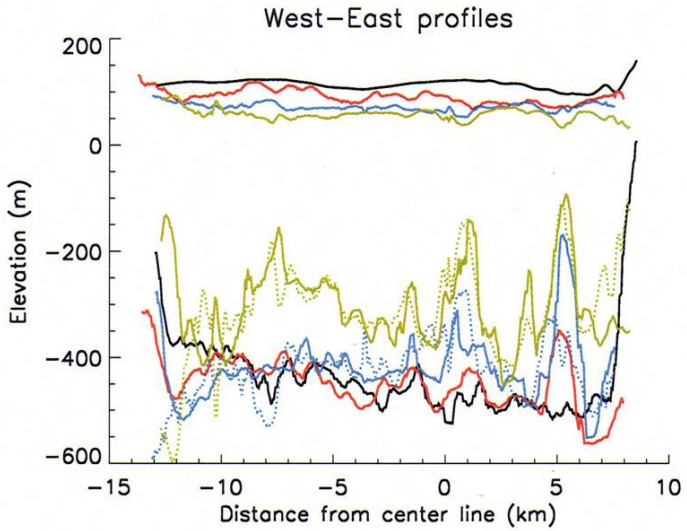

Figure 3. (top) Surface and (bottom) bed elevation of the ice shelf (continuous lines) and bed elevation deduced from hydrostatic equilibrium (dotted lines). Profiles 1−4 in Figure 1 are, resp., yellow, blue, red and black. Channels at km −8, −2, 1 and 5 deepen by 100 m's away from the grounding line.