The Cryosphere Discuss.,
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The Cryosphere Discussions
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Interactive comment on "Brief communication: Antarctic sea ice gain does not compensate for increased solar absorption from Arctic ice loss" *by* Christian Katlein et al.

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The values given in Figure 1 (b) are not correct. According to the CERES satellite data, from 2001-2014 the amount of sunlight absorbed into the arctic oceans is between 50 and 55 W/m2. Antarctic oceans varied between 55 and 58 W/m2 over the period.

The authors give values from 150 to 180 W/m2 for the Arctic and from 180 to 245 W/m2 for the Antarctic.

The Kiehl-Trenberth global energy budget gives a global average value of 167 W/m2 fro absorption, and the CERES data gives a global average of 162 W/m2 ... the authors' claim is larger than the K/T global average.

There is a separate issue. The CERES data shows a clear peak in Arctic oceanic absorption during the 2012 low in sea ice. There is no indication of this in the APP-x data.

Best regards,

w.

Interactive comment on The Cryosphere Discuss., doi:10.5194/tc-2016-279, 2017.

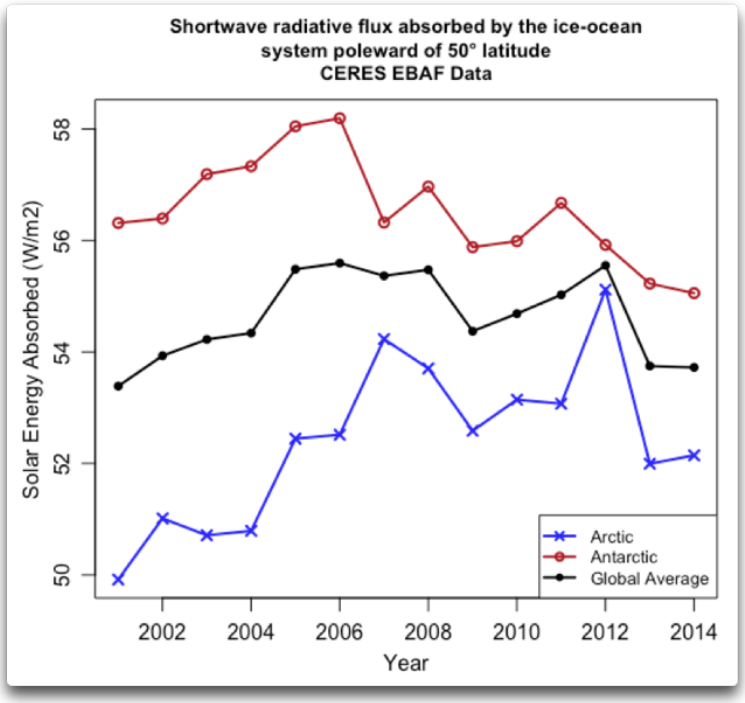
Shortwave radiative flux absorbed by the ice-ocean
system poleward of 50° latitude
CERES EBAF Data
Solar Energy Absorbed (W/m2)
50
52
54
56
58
2002
2004
2006
2008
2010
2012
2014
Year
Arctic
Antarctic
Global Average

Fig. 1.

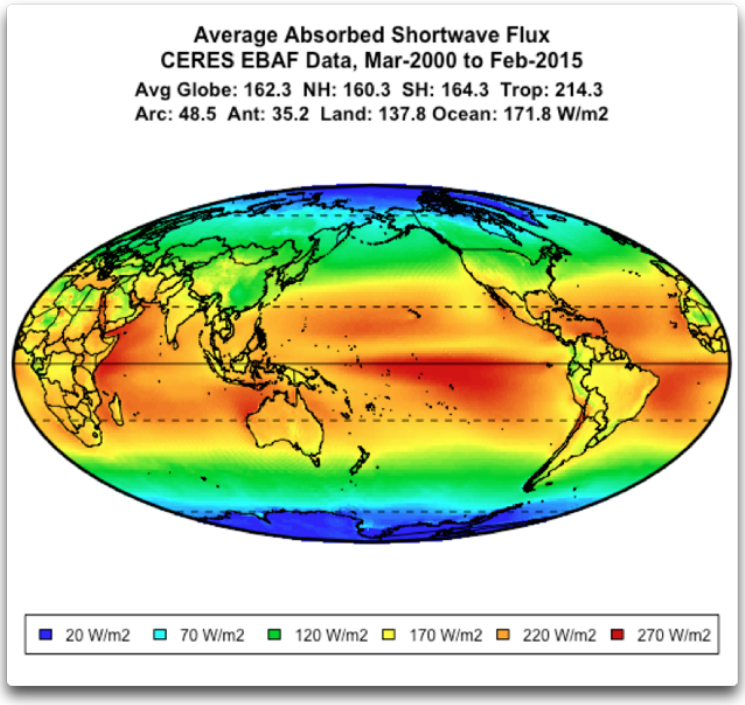
Average Absorbed Shortwave Flux
CERES EBAF Data, Mar-2000 to Feb-2015
Avg Globe: 162.3 NH: 160.3 SH: 164.3 Trop: 214.3
Arc: 48.5 Ant: 35.2 Land: 137.8 Ocean: 171.8 W/m2
20 W/m2
70 W/m2
120 W/m2
170 W/m2
220 W/m2
270 W/m2

Fig. 2.

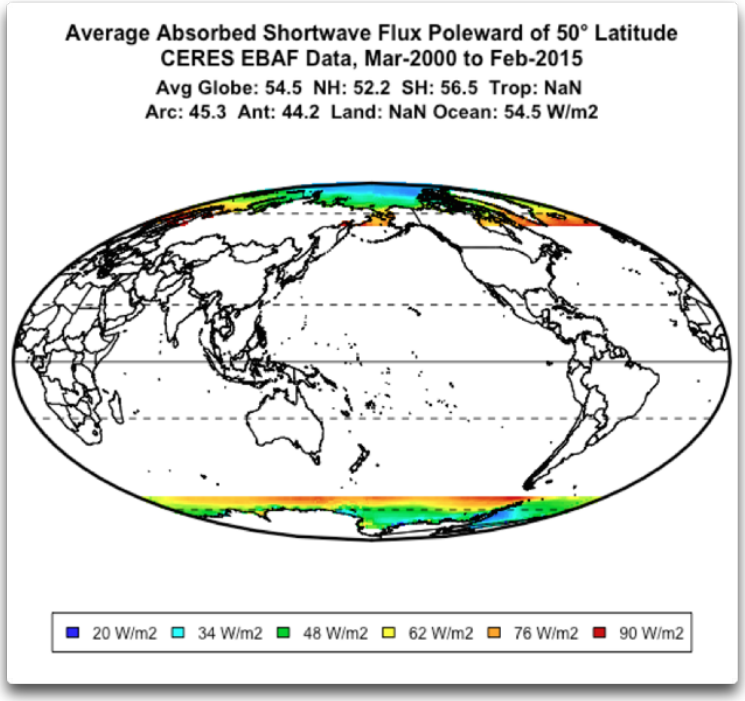
Average Absorbed Shortwave Flux Poleward of 50° Latitude
CERES EBAF Data, Mar-2000 to Feb-2015
Avg Globe: 54.5 NH: 52.2 SH: 56.5 Trop: NaN
Arc: 45.3 Ant: 44.2 Land: NaN Ocean: 54.5 W/m2
20 W/m2
34 W/m2
48 W/m2
62 W/m2
76 W/m2
90 W/m2

Fig. 3.