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Correction to "An alternative explanation for differential temperature trends at the surface and in the lower troposphere"

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[1] In the paper "An alternative explanation for differential temperature trends at the surface and in the lower troposphere" by Klotzbach et al. (*Journal of Geophysical Research*, *114*, D21102, doi:10.1029/2009JD011841, 2009), there were several referencing and typographical errors. First, a reference to R. McKitrick (personal communication, 2009) depended upon an analysis of GISS model output placed online by Gavin Schmidt of NASA in early 2009. Second, the reference we listed in several places with respect to the three possible explanations for this divergence as *Santer et al*. [2005] should be *Santer et al.* [2000]: Santer, B. D., et al. (2000), Interpreting differential temperature trends at the surface and in the lower troposphere, *Science*, *287*, 1227–1232, doi:10.1126/science.287.

[2] Third, the "Student's *t* test" was mistakenly described as a "p-test." Fourth, the data set that was utilized in the polar calculations was the CRU TS 3.0 data set (T. D. Mitchell and P. D. Jones, An improved method of constructing a database of monthly climate observations and associated high-resolution grids, *International Journal of Climatology*, *25*, 693–712, doi:10.1002/joc.1181, 2005), not the CRUTEM3v data set as discussed in the paper. The caption of Table 4 should therefore be "Linear Trends for Maximum and Minimum Temperature for CSU TS 3.0 for 60°S–90°N, 0°–360°, and for 60°N–90°N Over the Period From 1979 to 2005." We regret the referencing oversights.

[3] It has been suggested by Phil Jones, at the University of East Anglia, that we repeat our calculations using the CRUTEM3v data set for the 60°N–90°N, 0°–360° area, as there may be smaller trends in this data set than in the CRU TS 3.0 data set used in the calculations made in our paper due to infilling in the CRU TS 3.0 data set. Since CRUTEM3v only includes mean temperature, we have calculated the linear per decade trends over the 1979–2005 period in both time series using the KNMI data explorer. Table 1 displays the per decade trends for both time series over the entire year, December–February and June–August. The linear trends are slightly greater in the CRUTEM3v data set than in the CRU TS 3.0 data set, increasing confidence in the robustness of our results.

[4] Gavin Schmidt, at NASA, has pointed out that our calculations for a 1.2 amplification factor for both land and ocean were based on a landmask from CRU that differs from the one that is currently used at GISS. Utilizing an appropriate landmask and data provided on his FTP site at http://www.giss.nasa.gov/staff/gschmidt/supp_data_Schmidt09.zip, we have redone our calculations and found amplification factors of 1.1 over land and 1.6 over ocean. Table 2 displays the new per decade linear trend calculations along with 95% confidence intervals for trends over land and ocean using these new amplification factors. Statistically significant trends at the 95% level are highlighted in boldface. All trends are significant at the 95% level.

[5] On the basis of these calculations, no changes are needed in our paper's conclusions.

Table 1. Linear per Decade Trends for Annual, December–February, and June–August for Mean Temperatures for 60°N–90°N, 0°–360° for the Entire Year, December–February, and June–August, Respectively, Over the Period From 1979 to 2005

	Data Set	
	CRU TS 3.0	CRUTEM3v
Annual Mean Temperature	0.49	0.50
Dec–Feb Mean Temperature	0.35	0.43
Jun–Aug Mean Temperature	0.40	0.44

Table 2. Land and Ocean per Decade Temperature Trends Over the Period From 1979 to 2008 for an Assumed 1.1 Amplification Factor Over Land and a 1.6 Amplification Factor Over Ocean[a]

Data Set	Land Trend, 1979–2008 (°C)	Ocean Trend, 1979–2008 (°C)
NCDC Amplified–UAH Lower Troposphere	**0.18** [0.11–0.25]	**0.07** [0.03–0.11]
NCDC Amplified–RSS Lower Troposphere	**0.14** [0.10–0.18]	**0.04** [0.00–0.09]
Hadley Amplified–UAH Lower Troposphere	**0.09** [0.05–0.12]	**0.11** [0.08–0.14]
Hadley Amplified–RSS Lower Troposphere	**0.05** [0.01–0.08]	**0.08** [0.05–0.11]

[a]For the NCDC Surface Analysis–UAH Lower Troposphere Analysis, for the NCDC Surface Analysis–RSS Lower Troposphere Analysis, for the Hadley Centre Surface Analysis–UAH Lower Troposphere Analysis, and for the Hadley Centre Surface Analysis–RSS Lower Troposphere Analysis. Trends that are statistically significant at the 95% level are highlighted in boldface; 95% confidence intervals are given in brackets.

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