

Latitudinally asymmetric response of global surface temperature: Implications for regional climate change

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Introduction

This auxiliary material includes a table and five figures.

1. 2012gl052116-ts01.pdf

Table S1. Land and ocean temperature changes (deg C) in each hemisphere during the three sub-periods of the 20th century. The changes are calculated from linear estimation method shown in Figure 1. 95% confidence interval of linear estimation is shown in brackets.

2. 2012gl052116-fs01.pdf

Figure S1. Warming rates (deg C/decade) for different sub-periods of the 20th century. (a) Calculated with data in 90 deg S–90 deg N. (b) Same as (a) but data used only in 60 deg S–60 deg N.

3. 2012gl052116-fs02.pdf

Figure S2. Same as Figure 2 but with land temperature data.

4. 2012gl052116-fs03.pdf

Figure S3. Same as Figure 2 but observation data are replaced with the 20th century simulation of GFDL model. In (d), both transient and equilibrium cases (GFDL model CO2-doubling simulation) are shown.

5. 2012gl052116-fs04.pdf

Figure S4. Same as Figure 2 but model data originate from MPI corresponding simulations.

6. 2012gl052116-fs05.pdf

Figure S5. Same as Figure 2d but extended to include Arctic regions. Ocean heat capacity, when covered by sea ice has very little heat capacity like land surface, so the land fraction shown here also includes sea ice fraction and hence Arctic ocean over the North Pole (which is covered with ice throughout the year) is shown as having 100% land fraction.

Table S1. Land and ocean temperature changes (°C) in each hemisphere during the three sub-periods of the 20th century. The changes are calculated from linear estimation method shown in Fig. 1. 95% confidence interval of linear estimation is shown in brackets.

		1910-1940	1940-1975	1975-2005
Land+Ocean	Globe	0.33[0.24, 0.42]	-0.09[-0.19, 0.01]	0.54[0.42, 0.67]
	NH	0.48[0.35, 0.61]	-0.24[-0.36, -0.11]	0.79[0.63, 0.96]
	SH	0.18[0.1, 0.25]	0.05[-0.06, 0.16]	0.29[0.18, 0.4]
Land	Globe	0.38[0.23, 0.52]	-0.16[-0.3, -0.02]	0.82[0.62, 1.03]
	NH	0.51[0.33,0.7]	-0.27[-0.46, -0.09]	1.02[0.78, 1.26]
	SH	0.10[-0.01, 0.21]	0.06[-0.08, 0.2]	0.43[0.22, 0.64]
Ocean	Globe	0.30[0.23, 0.38]	-0.05[-0.15, 0.05]	0.38[0.29, 0.47]
	NH	0.45[0.35, 0.55]	-0.20[-0.32, -0.08]	0.58[0.46, 0.69]
	SH	0.20[0.13, 0.28]	0.05[-0.06, 0.16]	0.25[0.16, 0.34]









