Forum IPCC

Fourth Assessment Report

Observed and Future Climate Change

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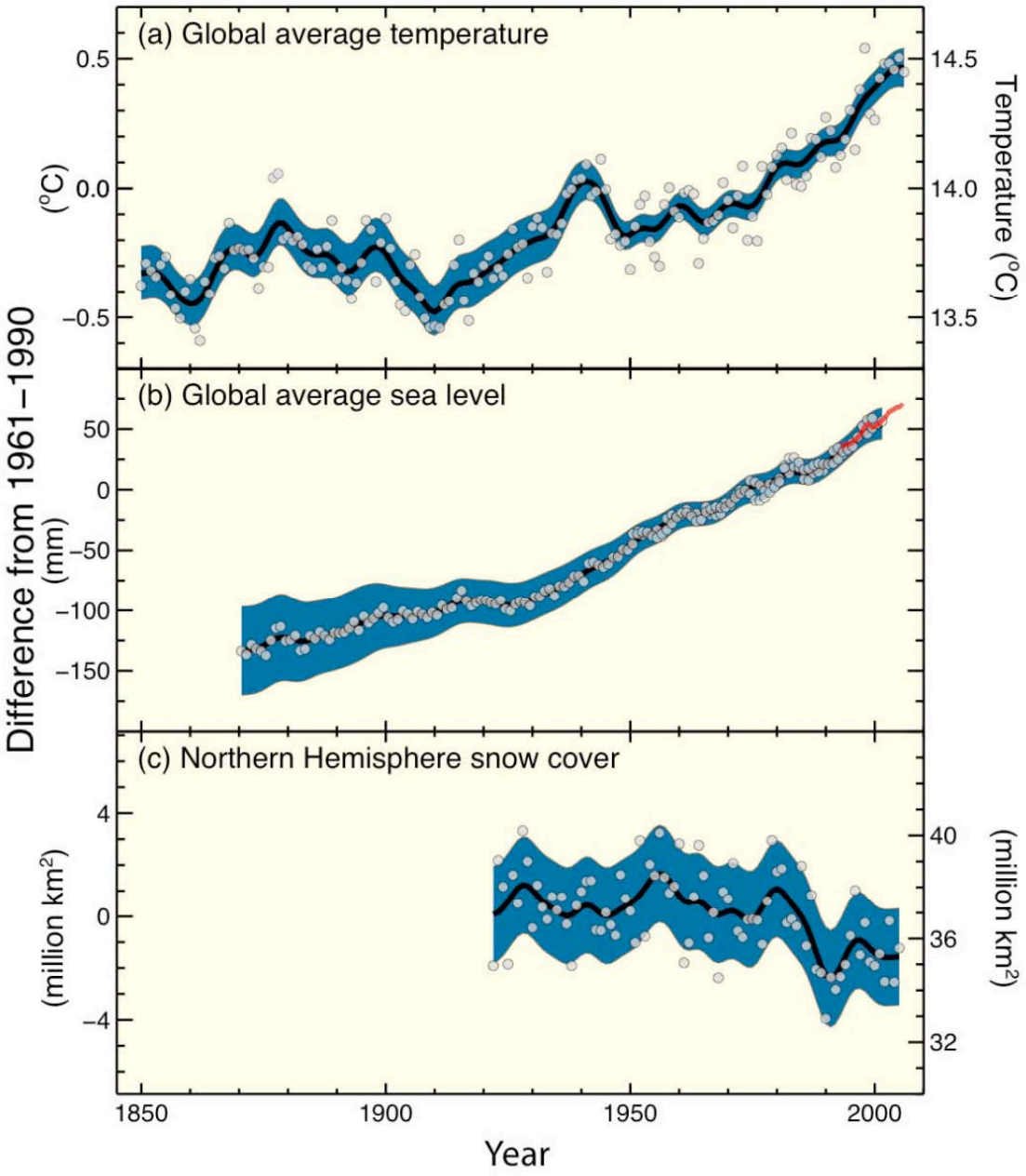
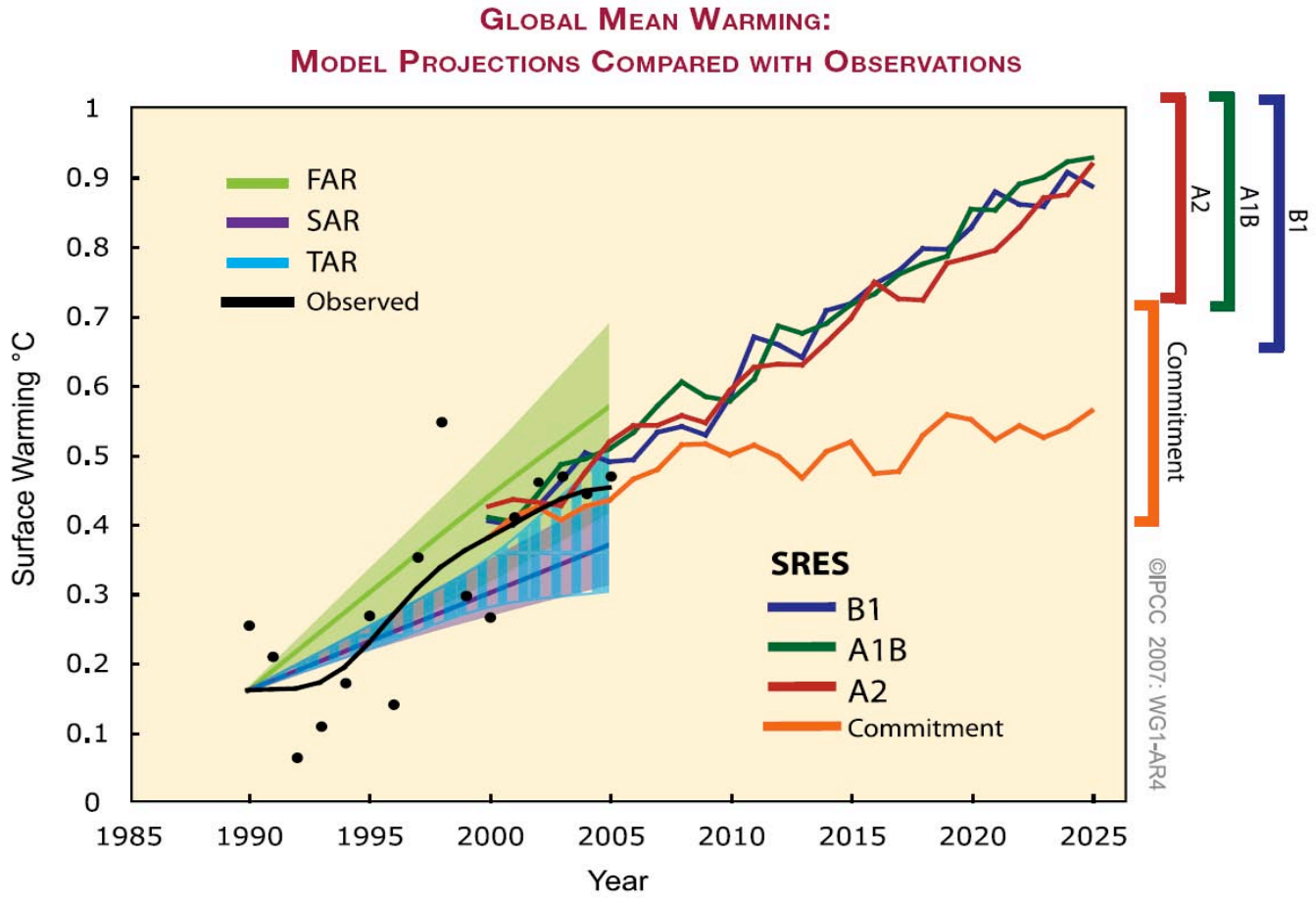


(IPCC, 2007, Fig. SPM-3)

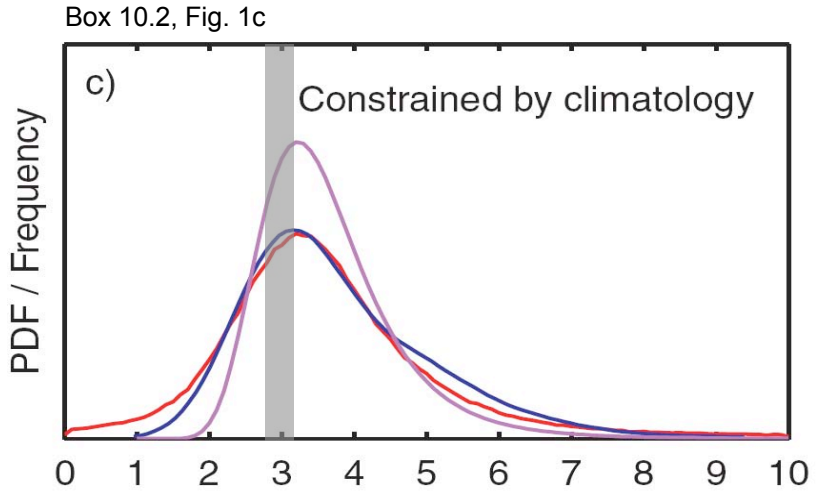
Warming in the climate system is unequivocal, ...



(IPCC, 2007, Fig. TS-26)

Previous IPCC projections of future climate changes can now be compared to recent observations, increasing confidence in short-term projections and the underlying physical understanding [...].

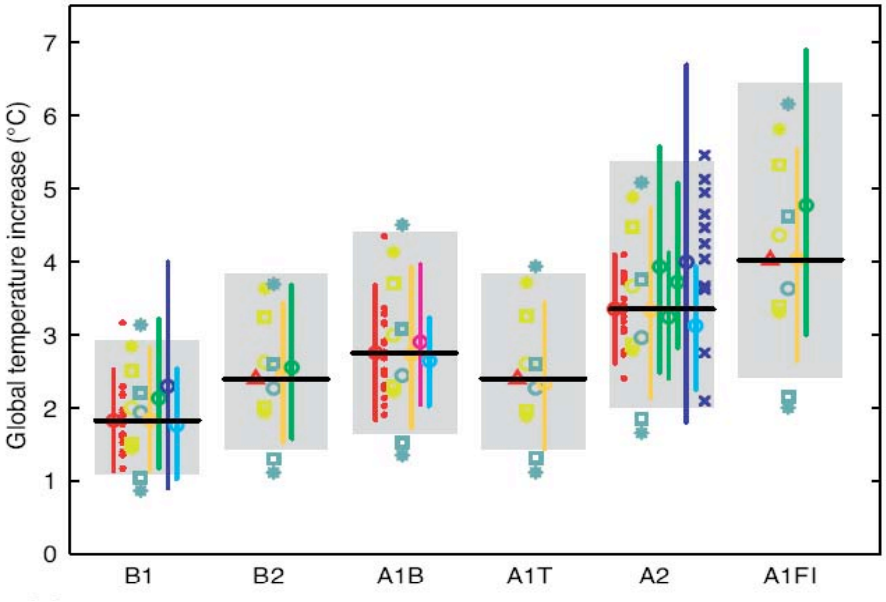
Equilibrium Climate Sensitivity: New Information in AR4



- PDFs can be determined
- low bound is well constrained
- a best estimate can be given

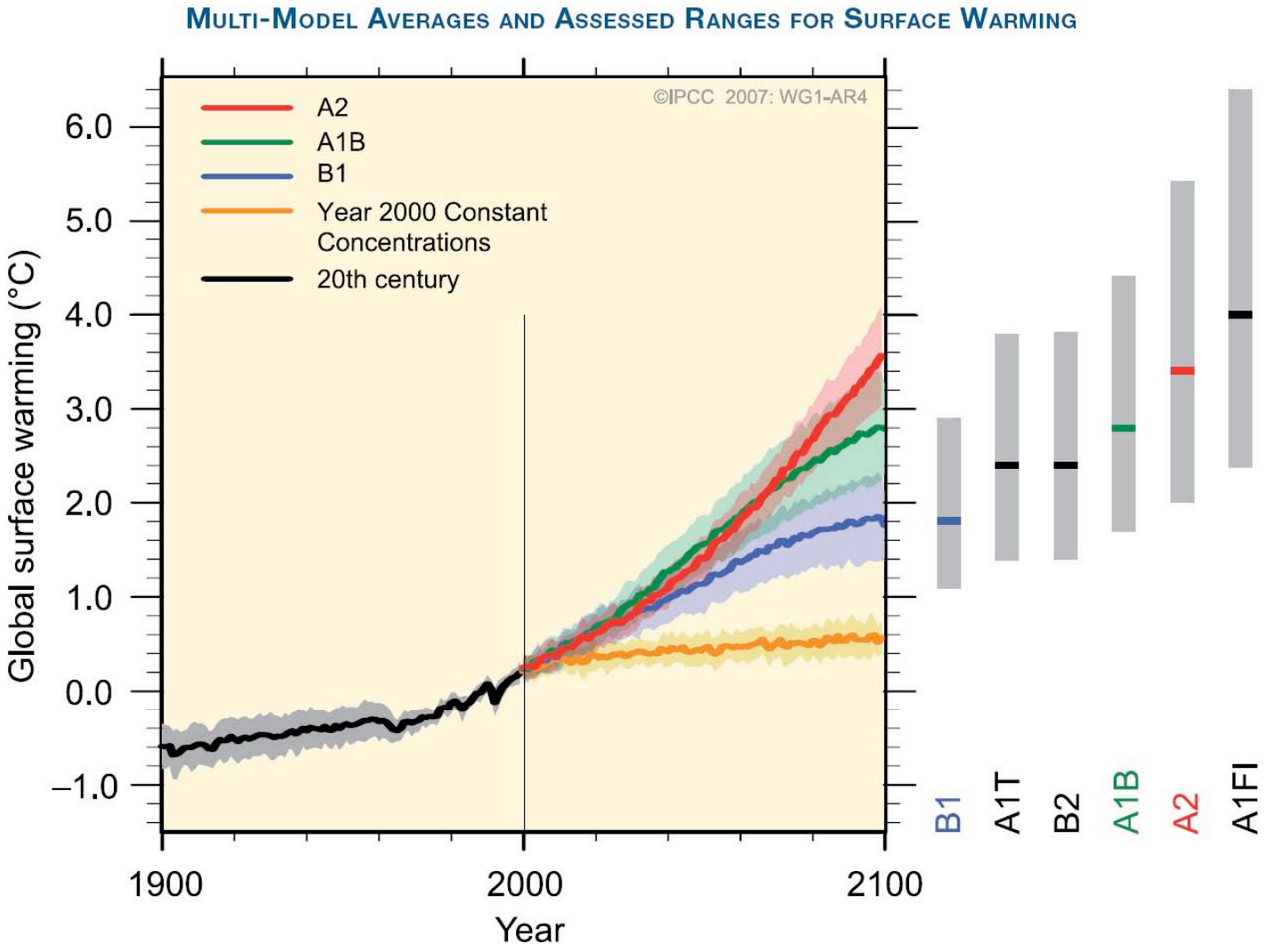
	TAR	AR4
Equilibrium Climate Sensitivity	range: 1.5 to 4.5°C	***likely* range: 2.0 to 4.5°C** ***very unlikely* <1.5°C** **best estimate about 3°C**

Warming in the 21. Century Depends on the Emissions



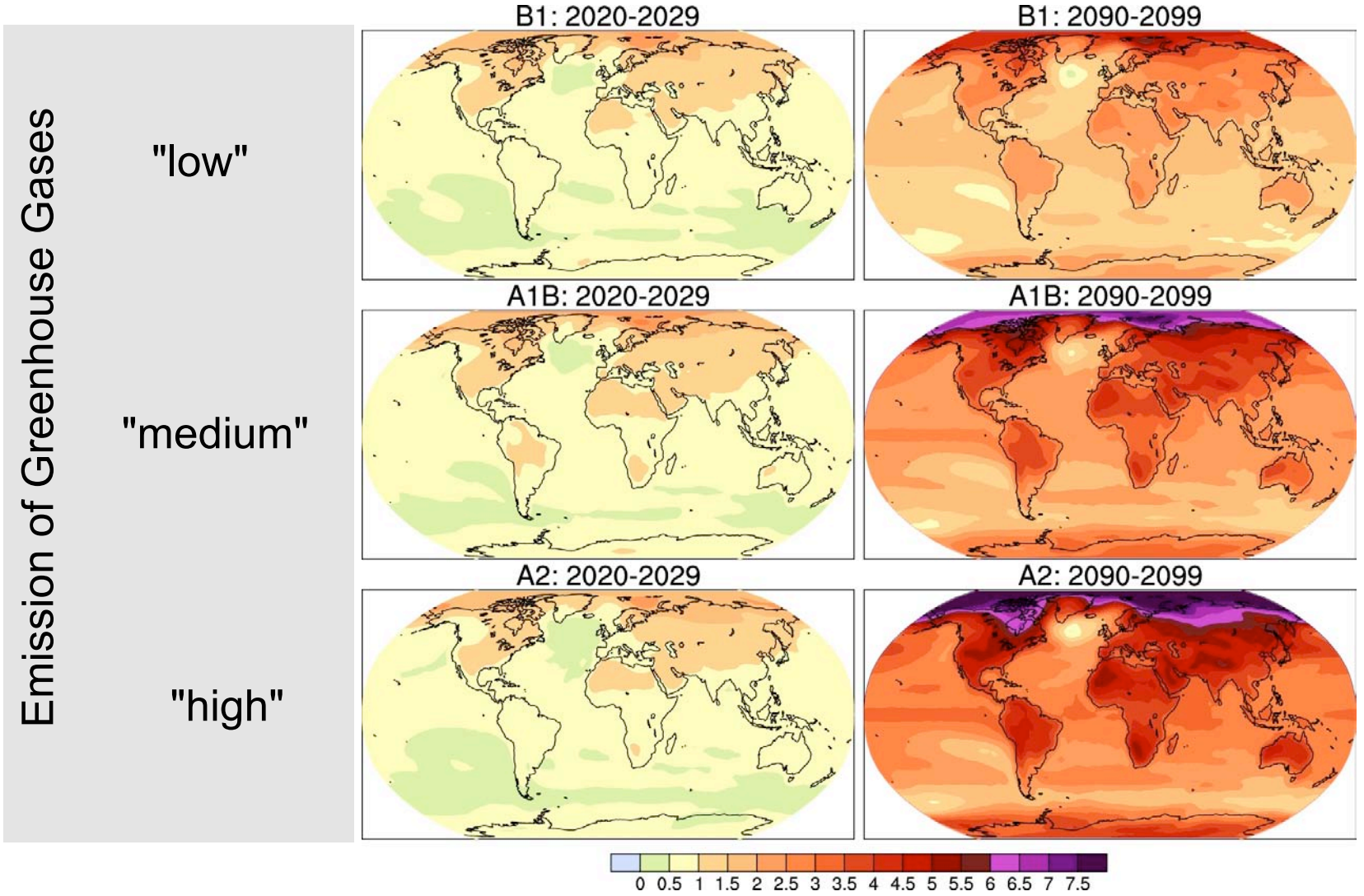
likely ranges of global mean surface temperature change

Warming in the 21. Century Depends on the Emissions



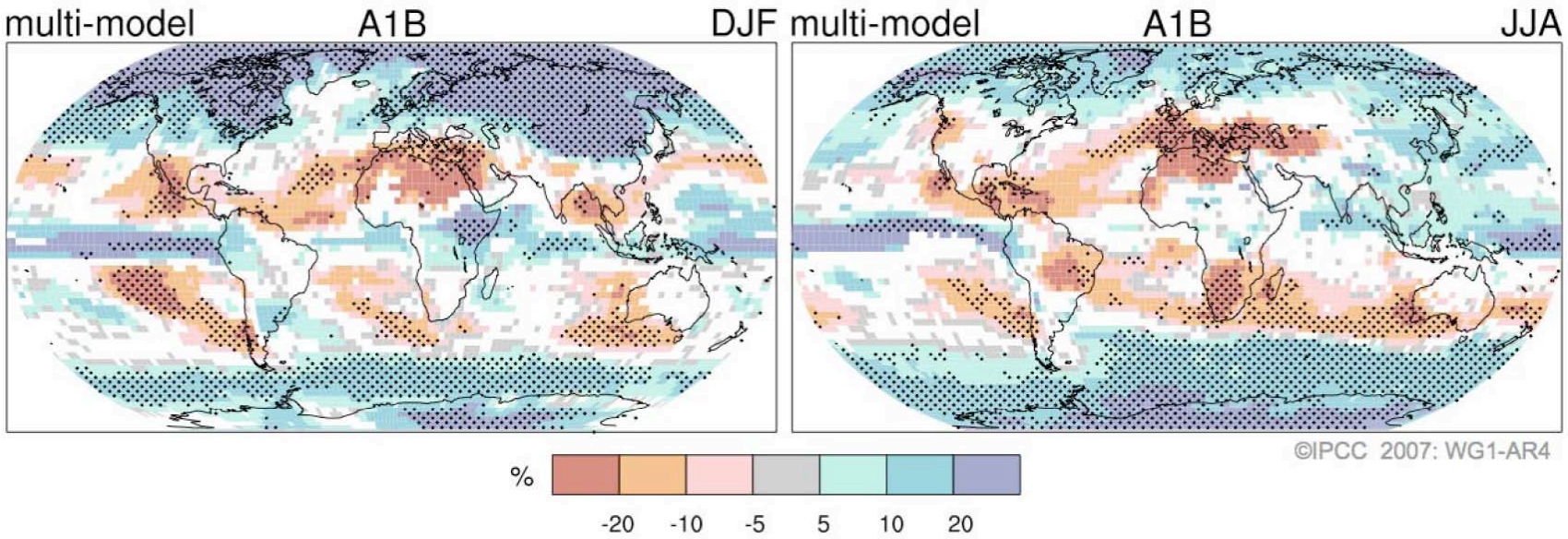
(IPCC, 2007, Fig. SPM-5)

Warming in the 21. Century Depends on the Emissions



(IPCC, 2007, Fig. SPM-6)

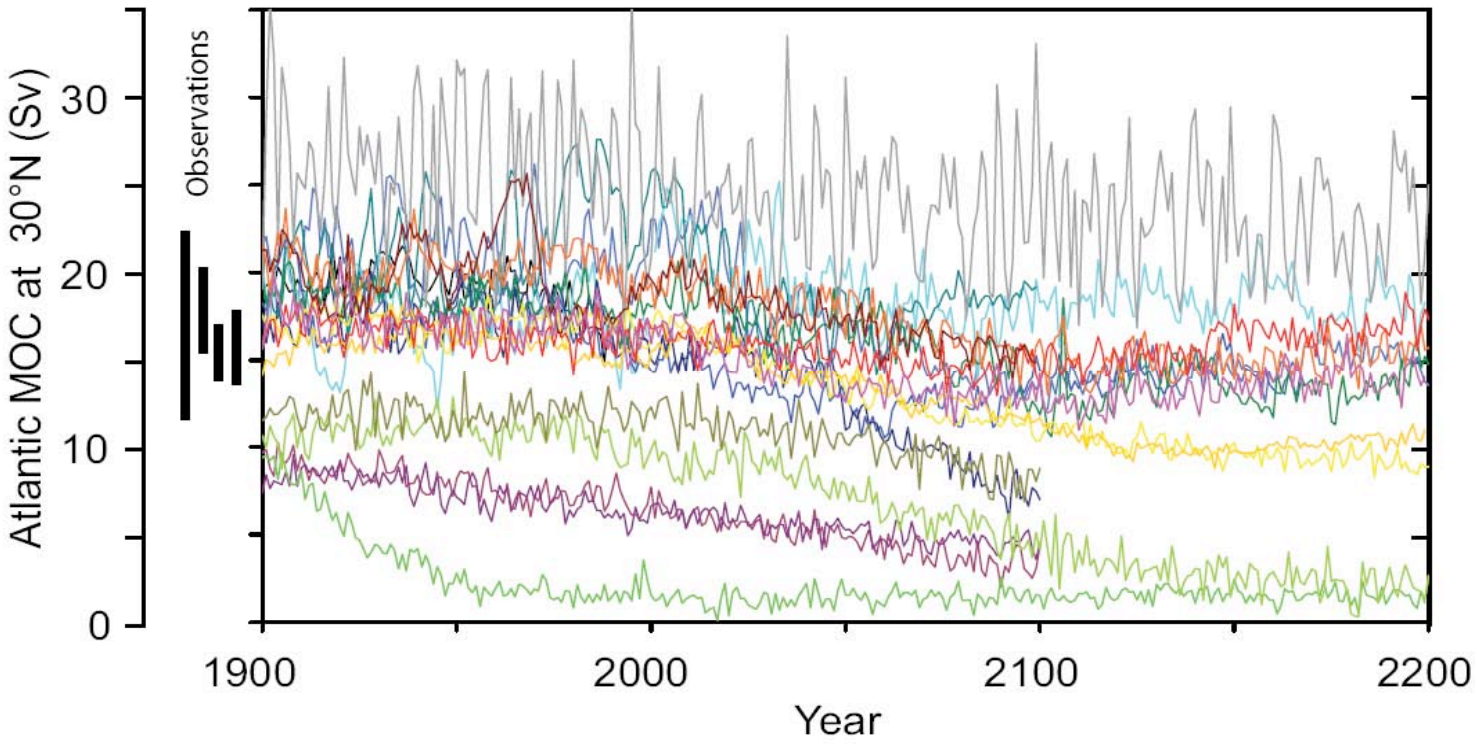
Global Precipitation Changes Based on Multi-Model Ensemble



(IPCC, 2007, Fig. SPM-7)

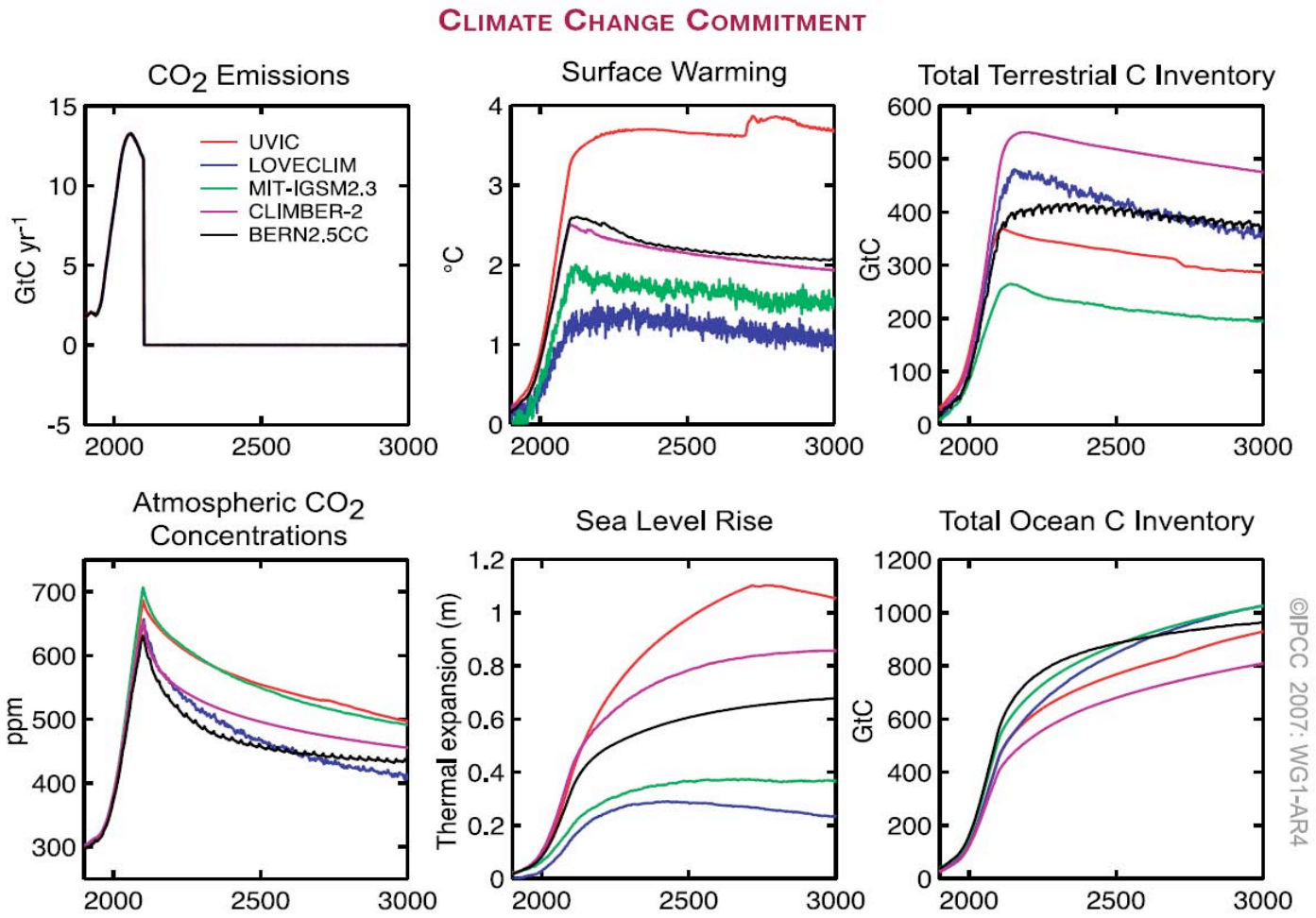
- Precipitation *very likely* increases in the high latitudes
- Precipitation *likely* decreases in the subtropics.

Atlantic Meridional Overturning Circulation



(IPCC, 2007, Fig. 10.15)

- MOC will *very likely* slow down during the 21st century
- MOC will *very unlikely* undergo a large abrupt transition



(IPCC, 2007, Fig. TS-31)

Continued greenhouse gas emissions ... cause further warming and induce many changes ... that would ***very likely*** be larger than those observed.

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- projections are based on multi-model ensembles
- aspects of the hydrological cycle can now be projected
- climate sensitivity is now better constrained
- EMICs provide information for long-term climate evolution

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