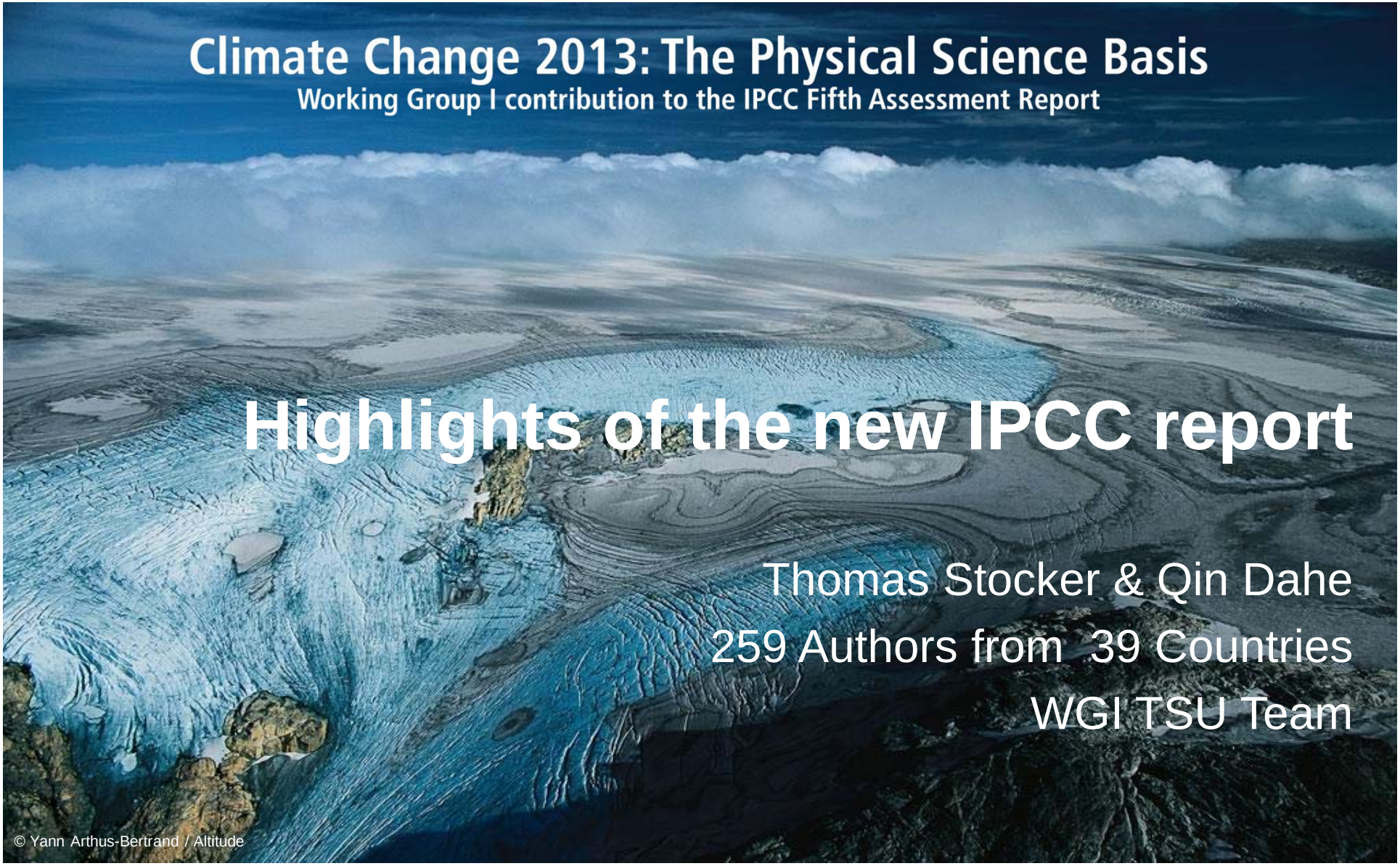


Highlights of the new IPCC report

Thomas Stocker & Qin Dahe
259 Authors from 39 Countries
WGI TSU Team

Key SPM Messages

19 Headlines

on less than 2 Pages

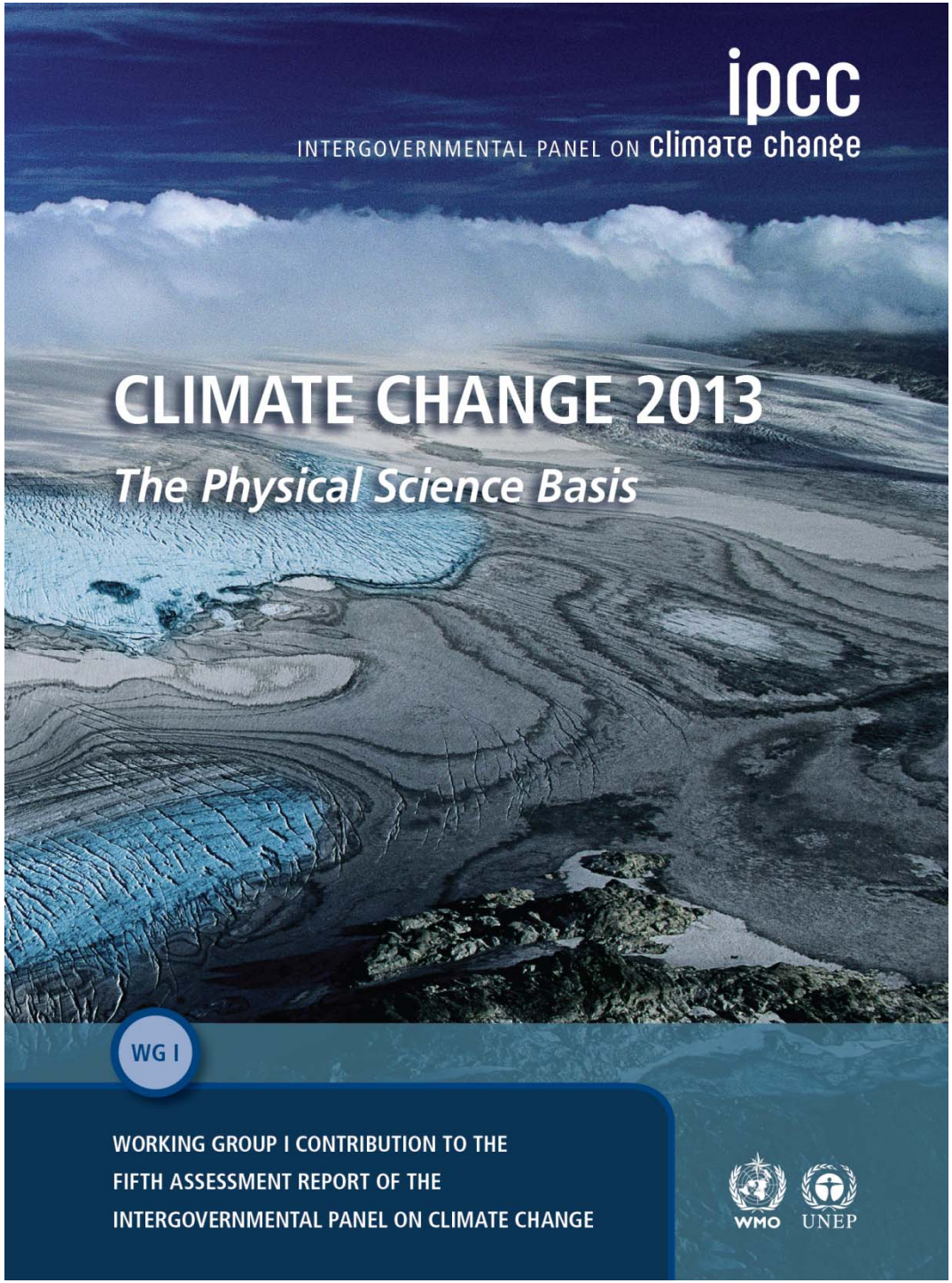
Summary for Policymakers
ca. 14,000 Words

14 Chapters, >1 Mio. Words
Atlas of Regional Projections

54,677 Review Comments
by 1089 Experts

2010: 259 Authors Selected

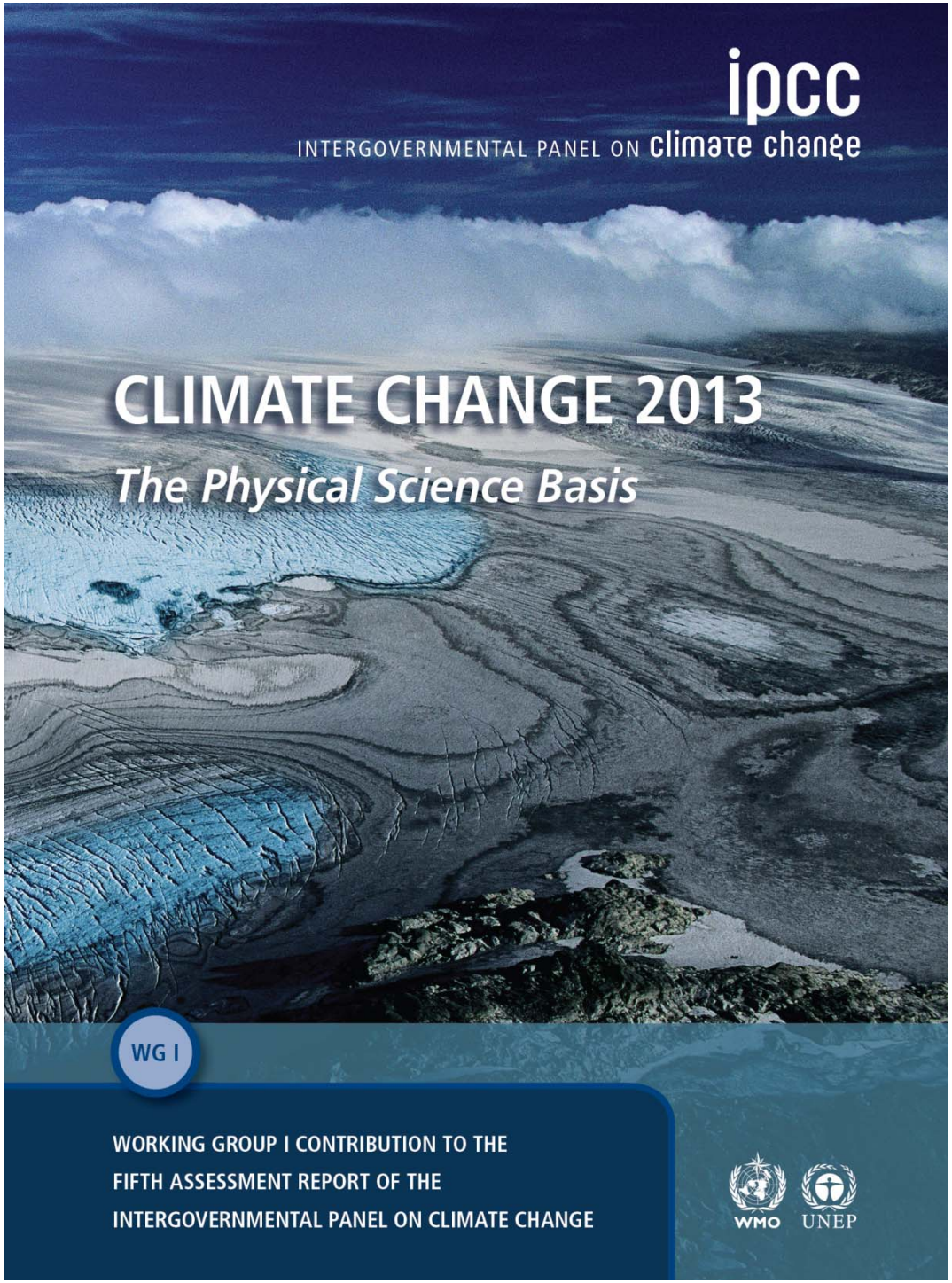
2009: WGI Outline Approved



Observation

Understanding

Future



Observation

What has changed?

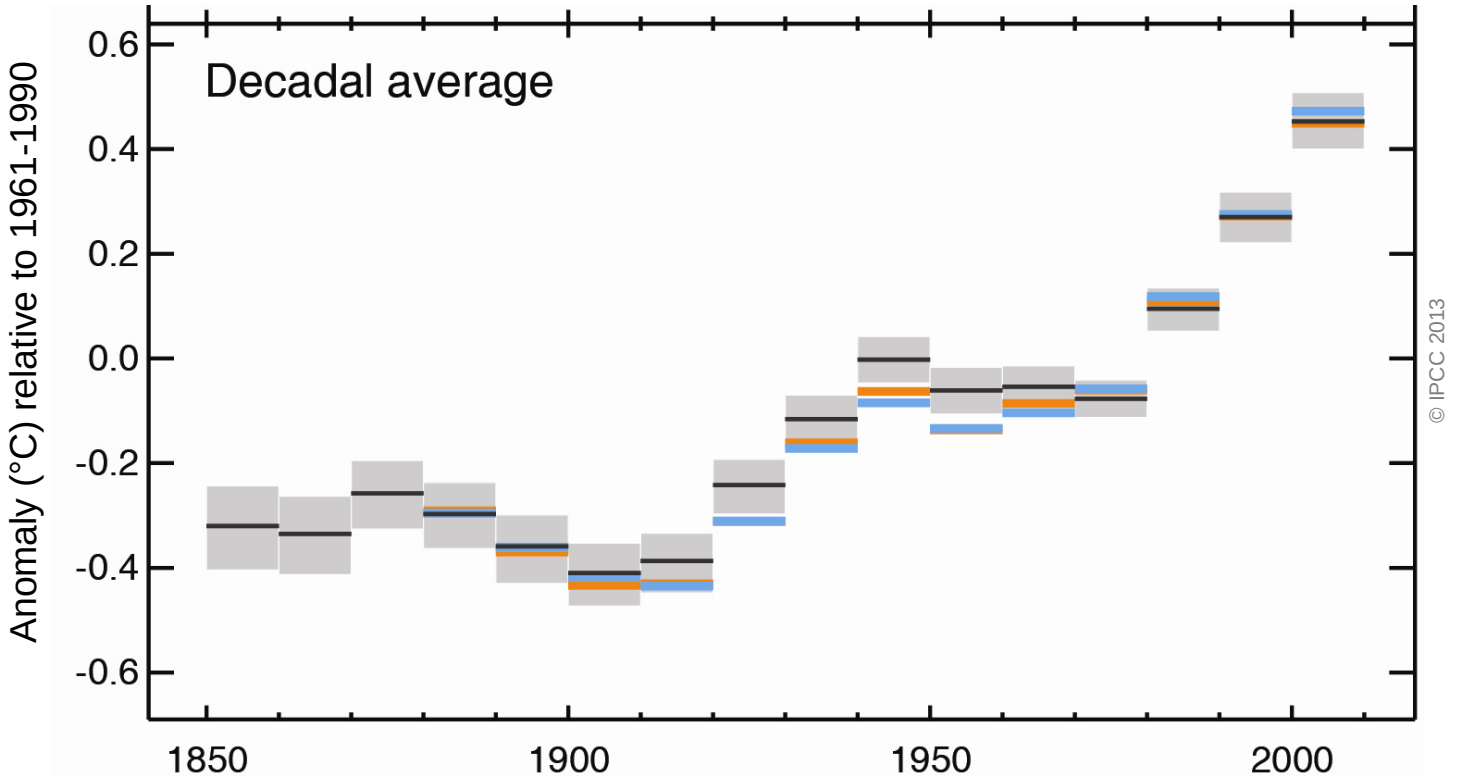
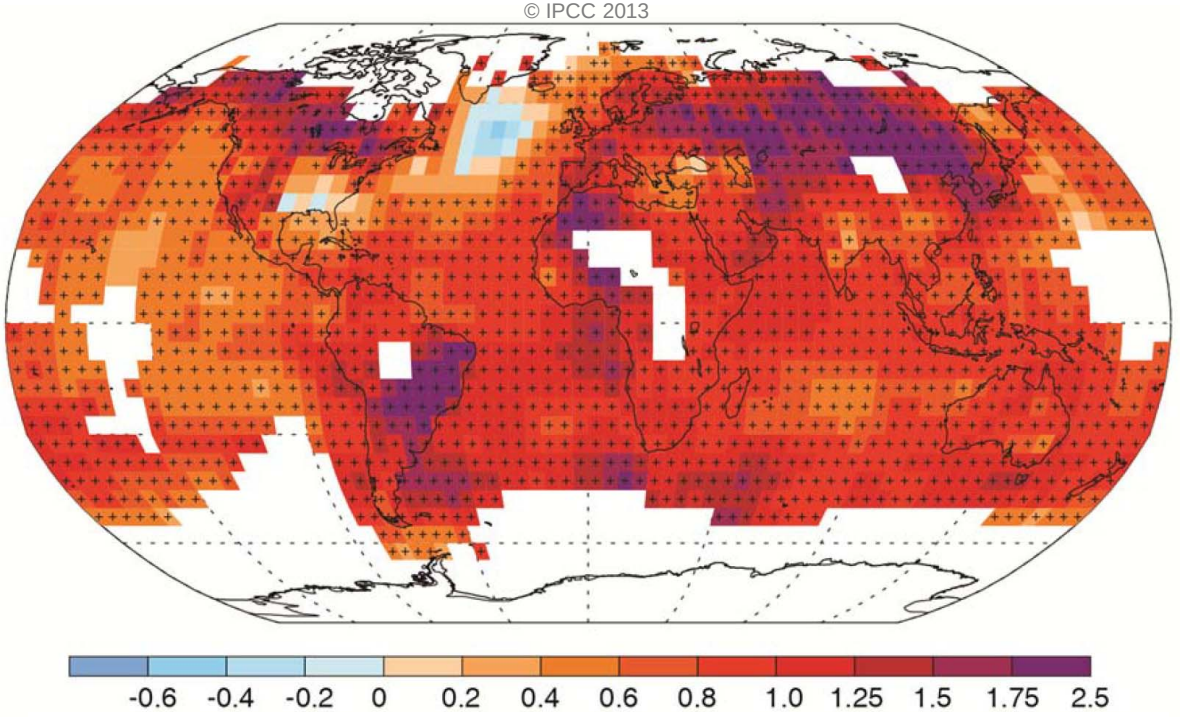


Fig. SPM.1a

Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850.

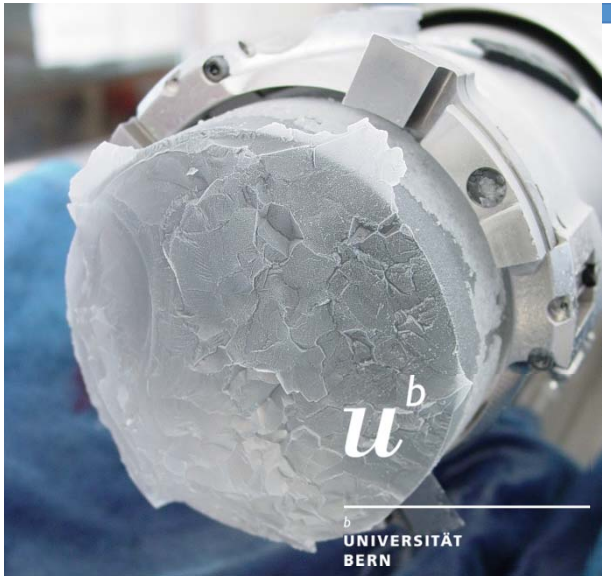
In the Northern Hemisphere, 1983–2012 was *likely* the warmest 30-year period of the last 1400 years (*medium confidence*).



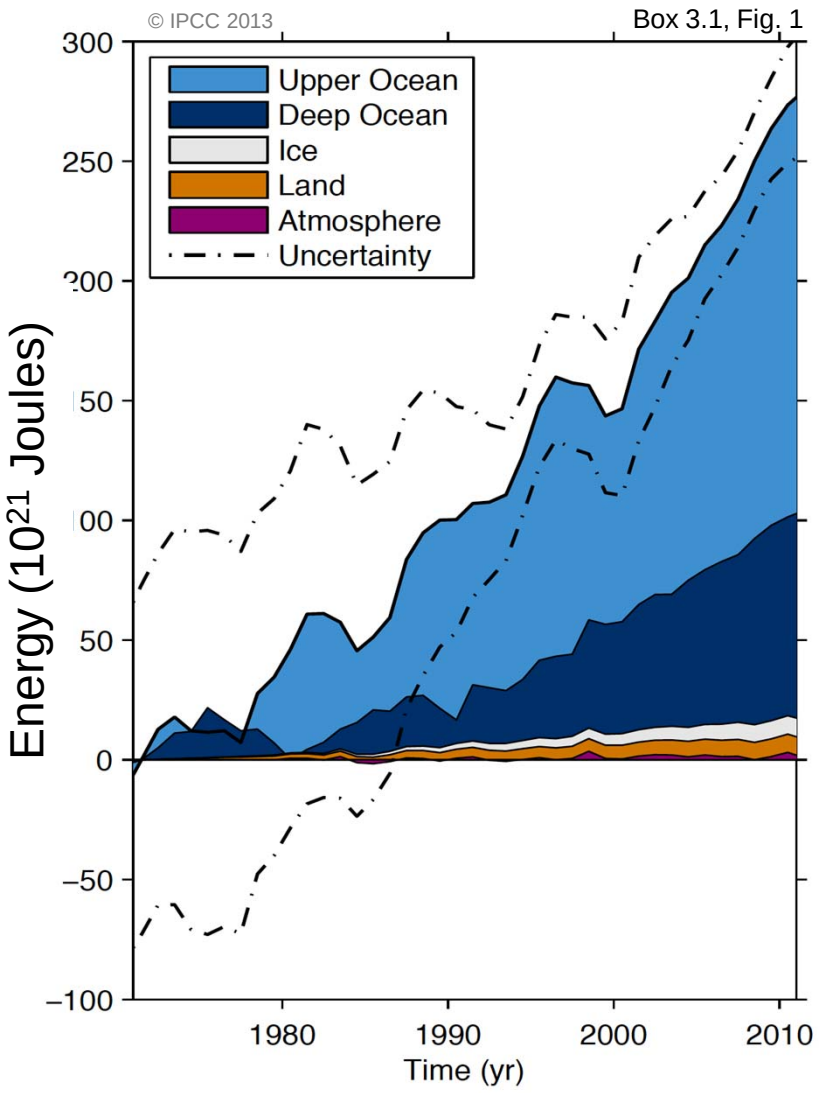
Temperature Difference 1901 to 2012 based on trend (°C)

Fig. SPM.1b

Warming of the climate system is unequivocal, [...]



The atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years.



Ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90% of the energy accumulated between 1971 and 2010 (*high confidence*).

Understanding

Why has it changed?

CO_2 provides largest RF

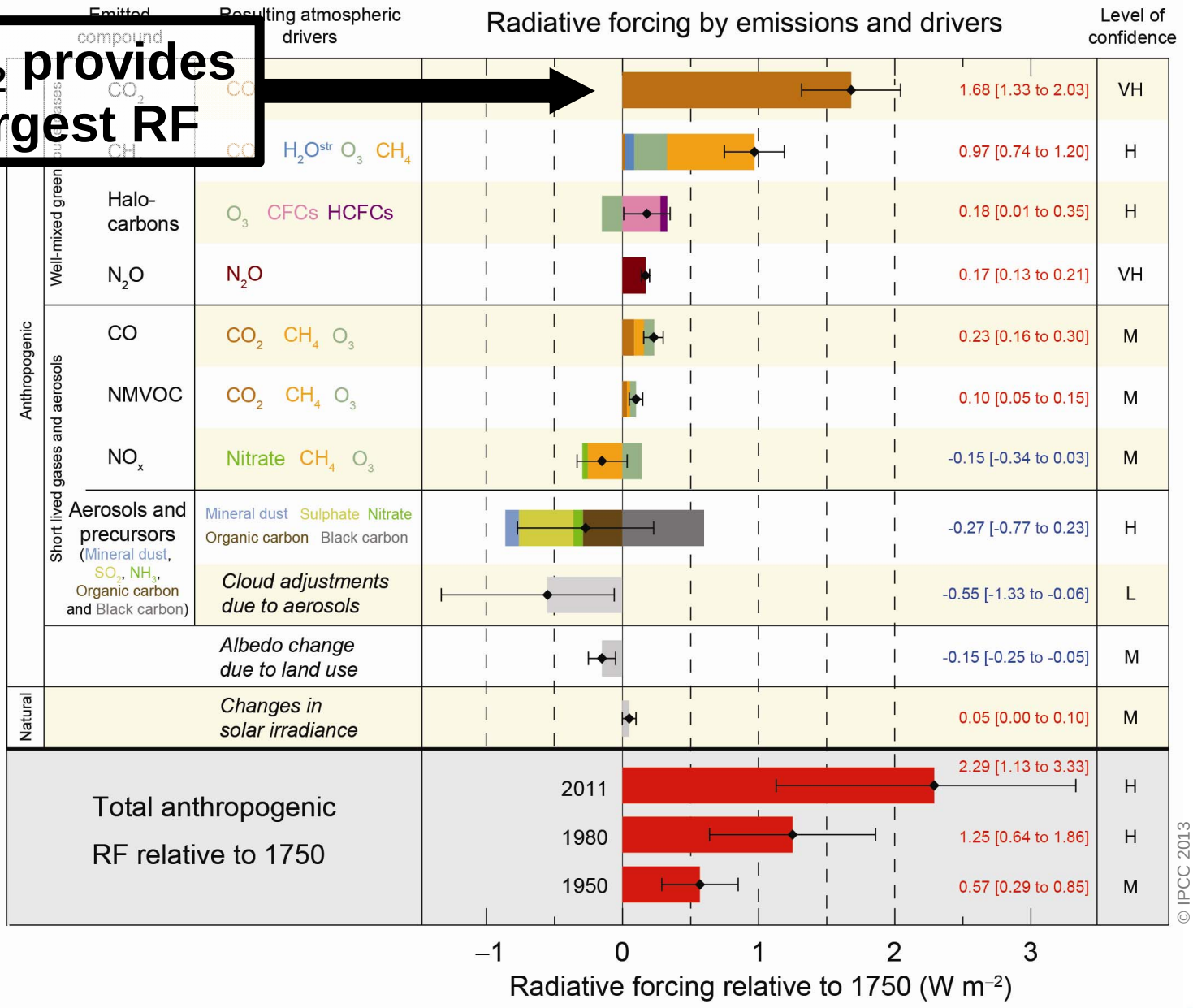


Fig. SPM.5

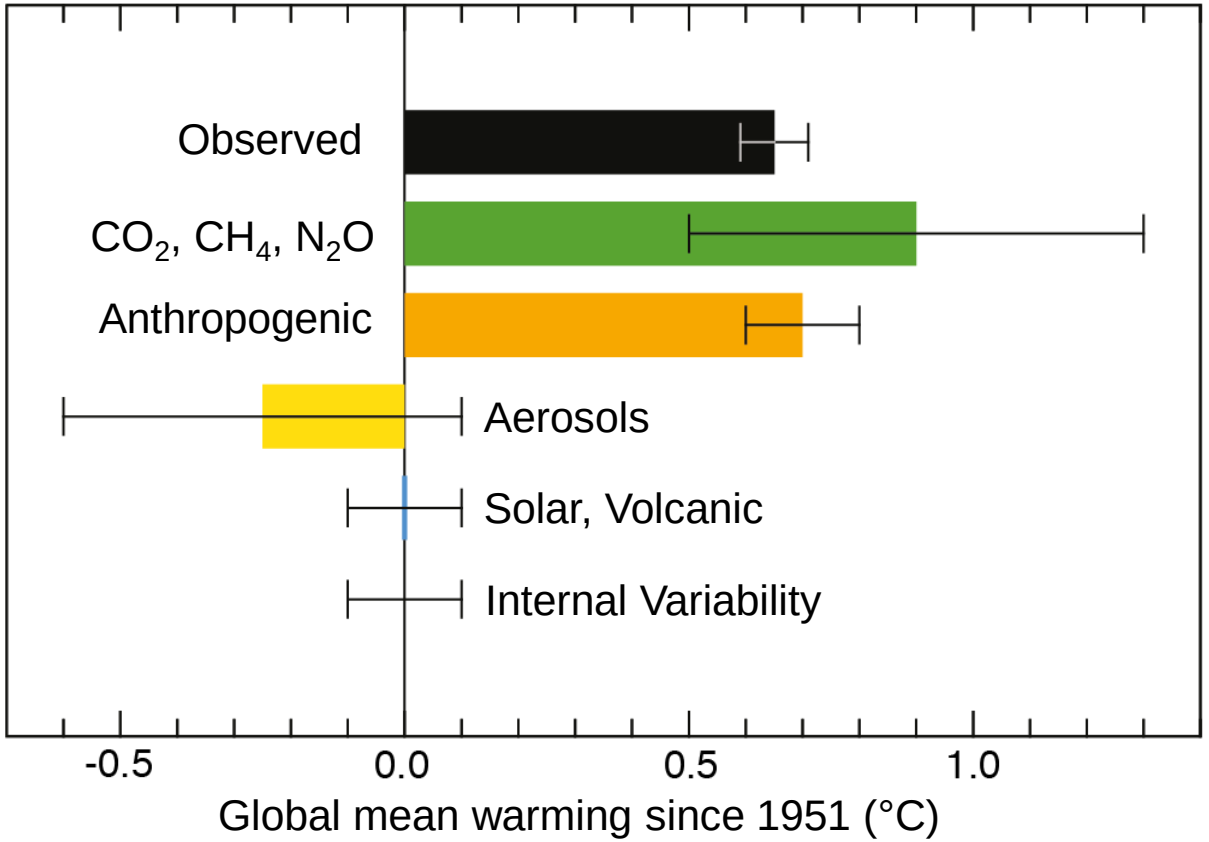


Fig. TS.10

Human influence on the climate system is clear.

Future

How will it change?

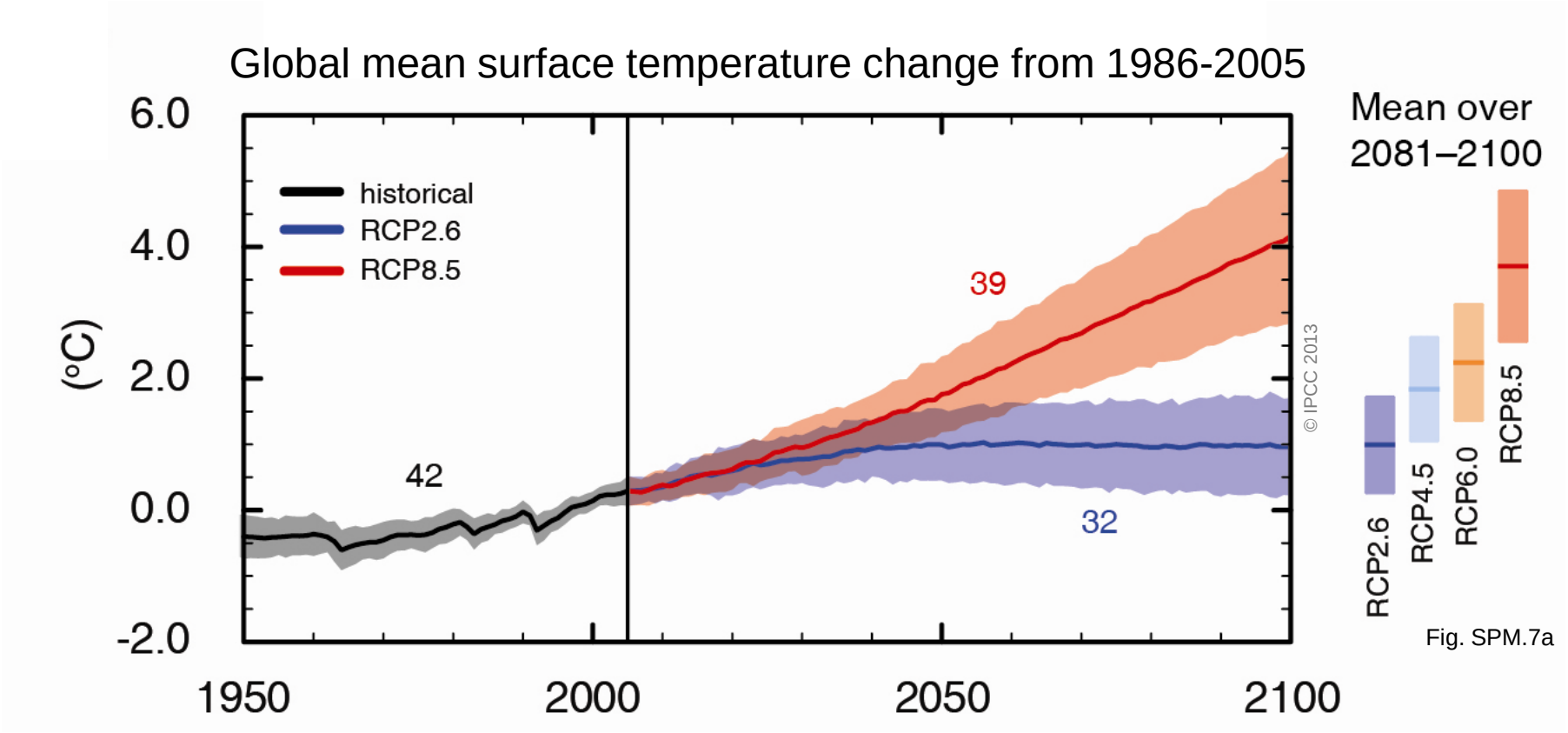


Fig. SPM.7a

Global surface temperature change for the end of the 21st century is *likely* to exceed 1.5°C relative to 1850–1900 for all scenarios except RCP2.6.

RCP2.6 RCP8.5

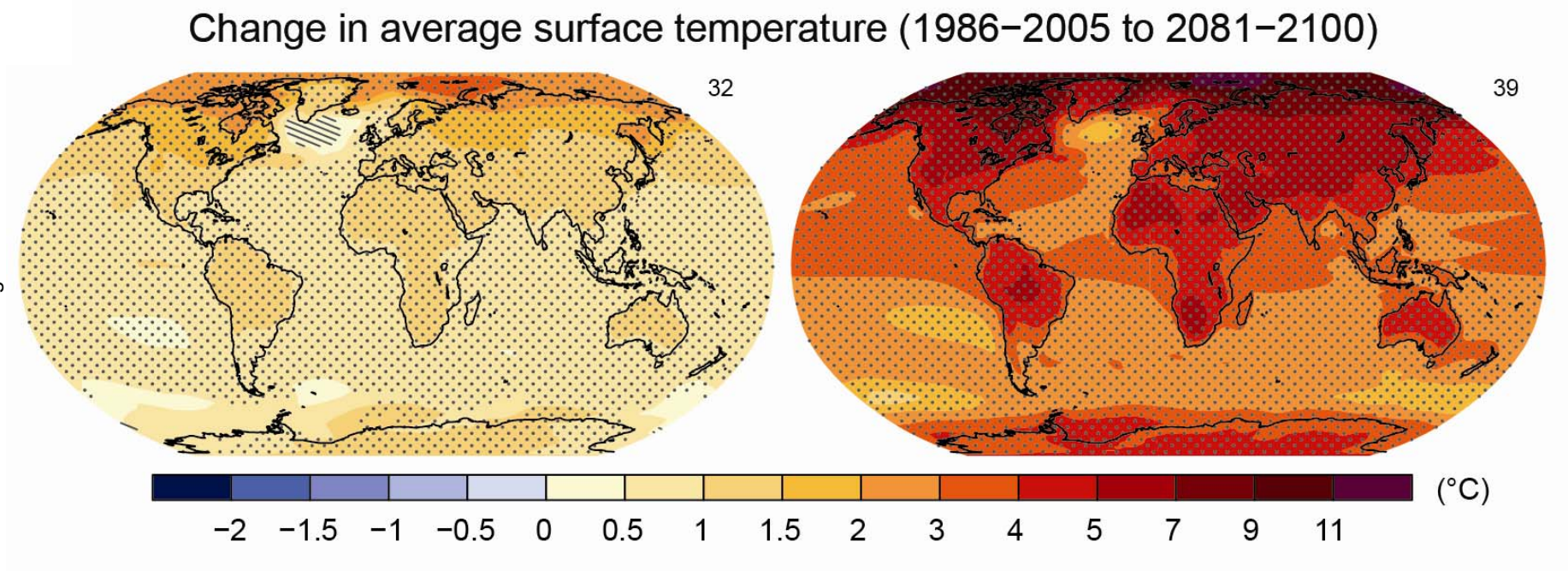


Fig. SPM.8

We have a choice.

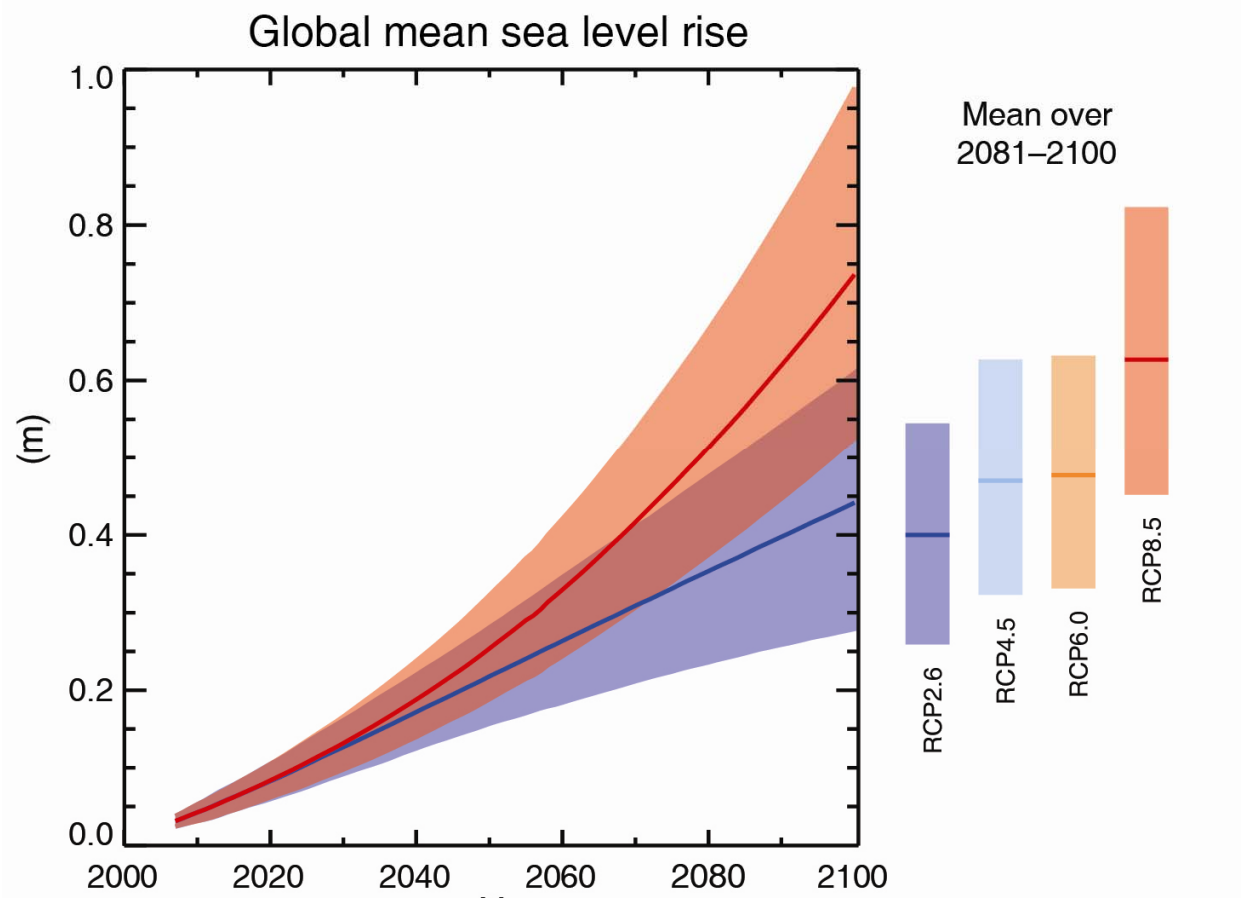


Fig. SPM.9

RCP2.6 (2081-2100), *likely* range: 26 to 55 cm

RCP8.5 (in 2100), *likely* range: 52 to 98 cm

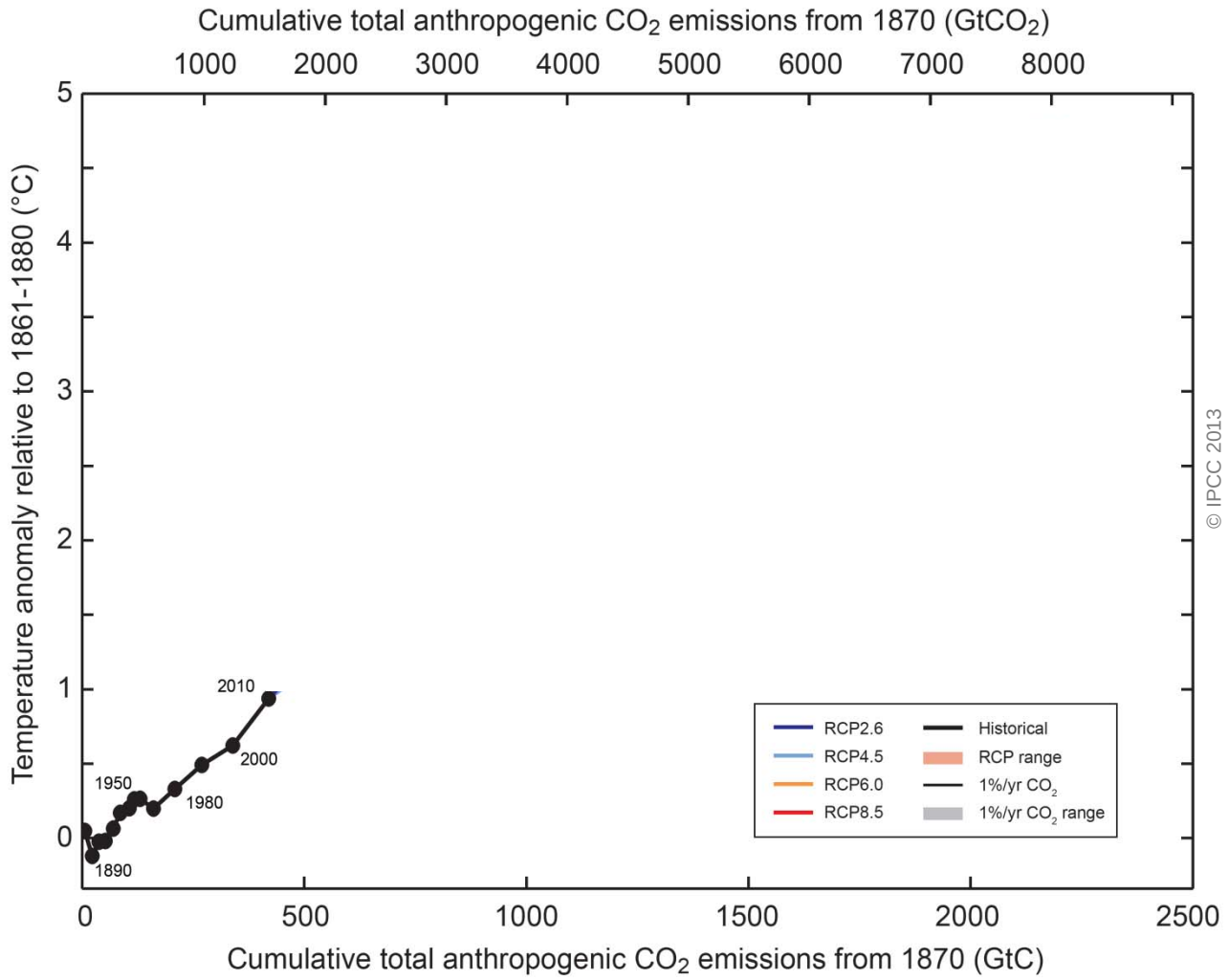


Fig. SPM.10

Cumulative emissions of CO_2 largely determine global mean surface warming by the late 21st century and beyond.

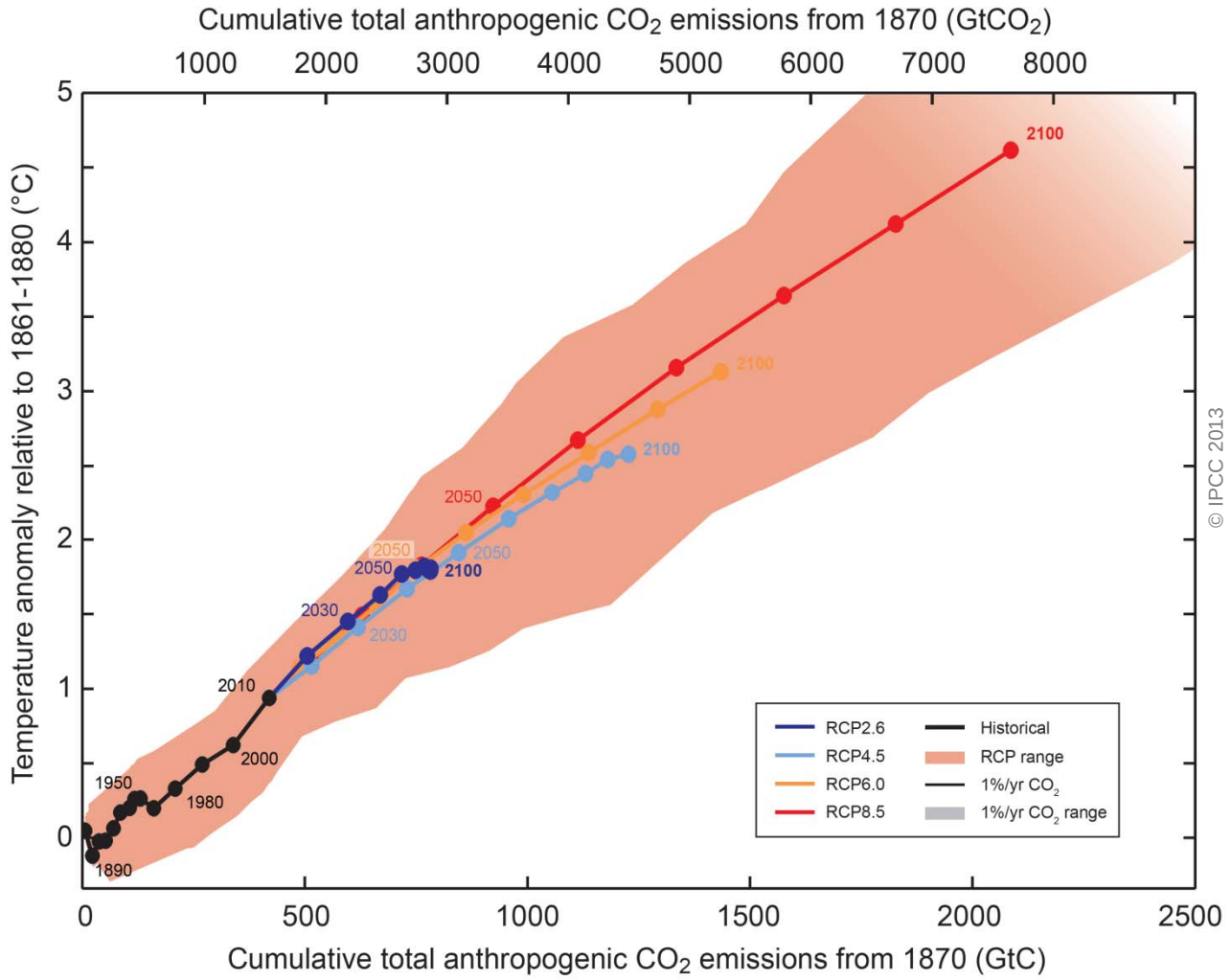


Fig. SPM.10

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

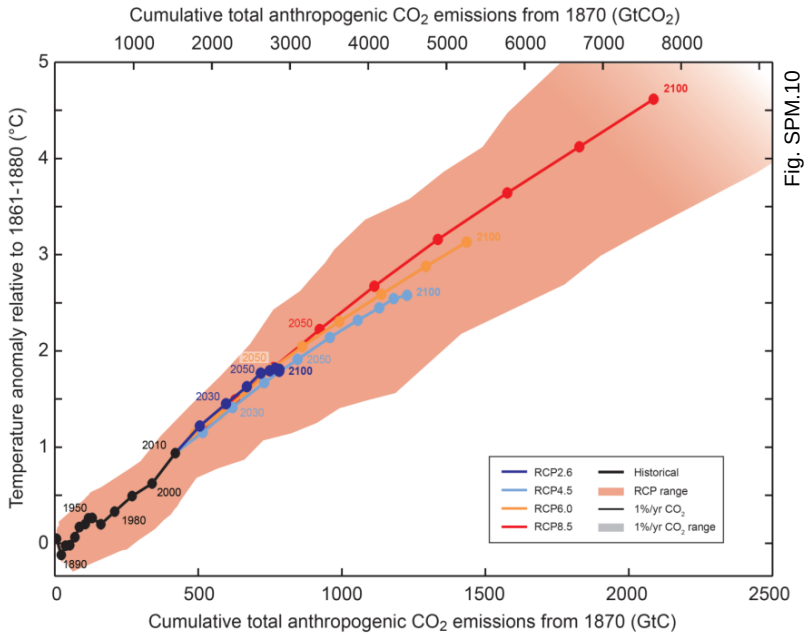
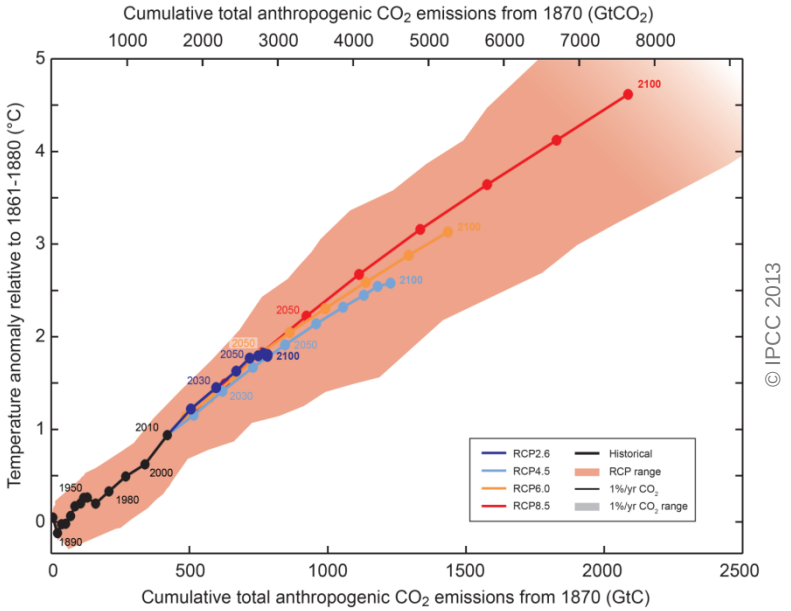


Fig. SPM.10

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

$\Delta T_{(1850\text{-}1900 \text{ to } 2100)}$	**Likelihood**	**Scenarios**
> 1.5°C	*likely*	RCP4.5, RCP6.0, RCP8.5
> 2°C	*likely*	RCP6.0, RCP8.5
> 2°C	*more likely than not*	RCP4.5



Limiting warming to *likely* less than 2°C since 1861-1880 requires cumulative CO_2 emissions to stay below 1000 GtC. Until 2011, over 50% of this amount has been emitted.

Accounting for other forcings, the upper amount of cumulative CO_2 emissions is 800 GtC; over 60% have been emitted by 2011.

RCP2.6 RCP8.5

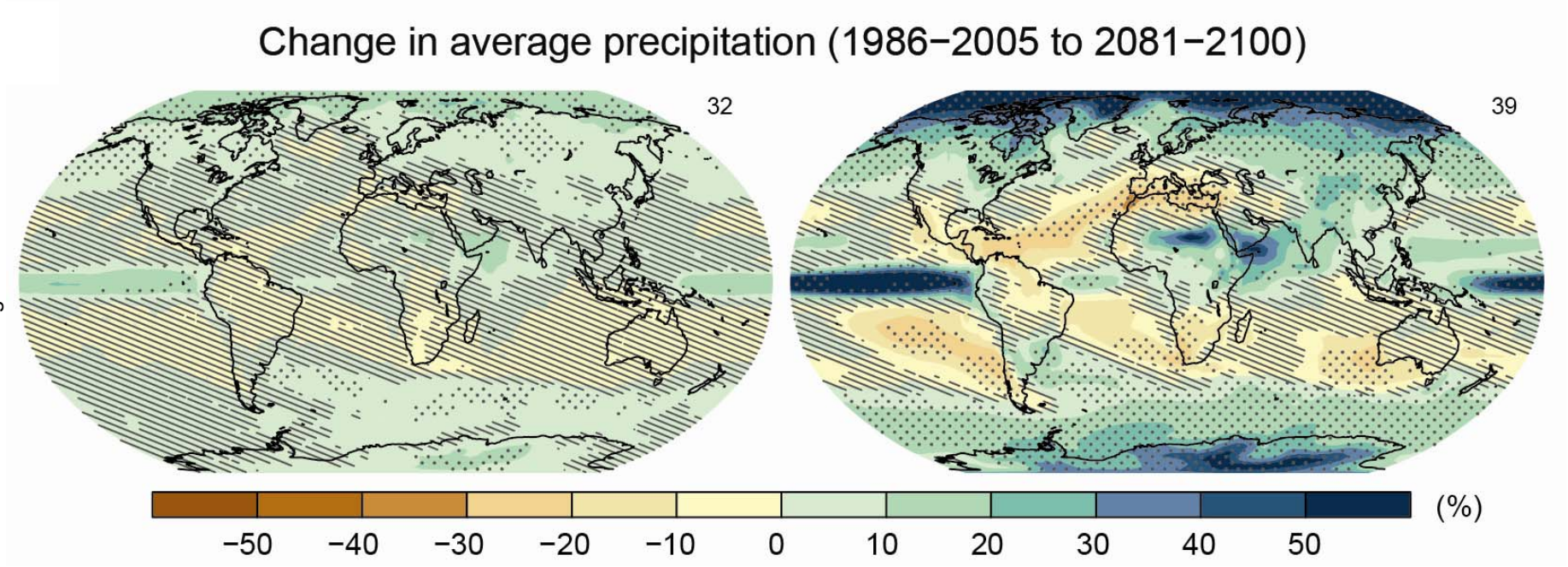


Fig. SPM.8

We have a choice.


Climate Change 2013: The Physical Science Basis
Working Group I contribution to the IPCC Fifth Assessment Report
Further Information
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