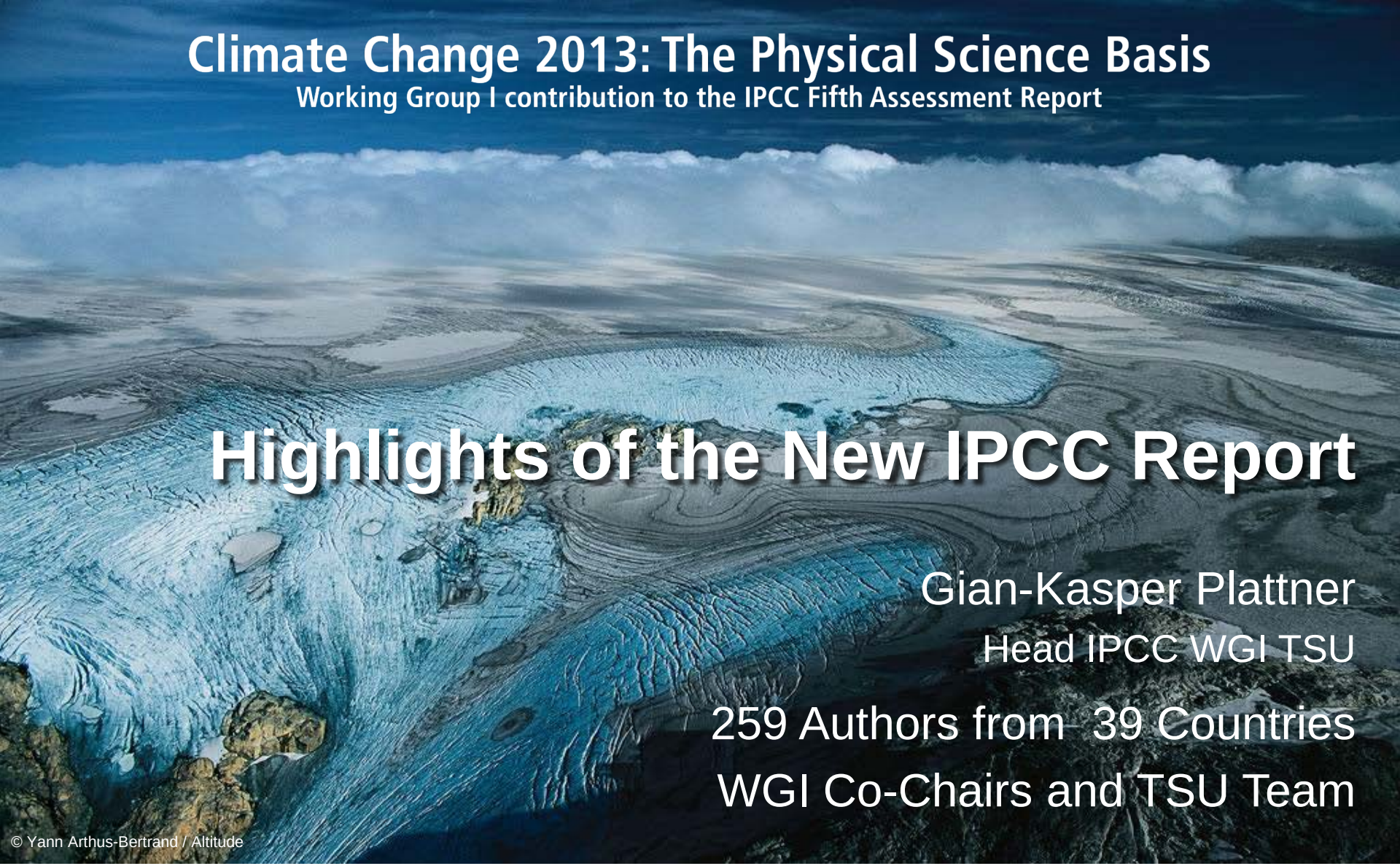
# Climate Change 2013: The Physical Science Basis

Working Group I contribution to the IPCC Fifth Assessment Report



# Highlights of the New IPCC Report

Gian-Kasper Plattner
Head IPCC WGI TSU

259 Authors from 39 Countries

WGI Co-Chairs and TSU Team

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Observations

Understanding

Future

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Warming in the climate system is unequivocal

Human influence on the climate system is clear

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

Fig. SPM.1b

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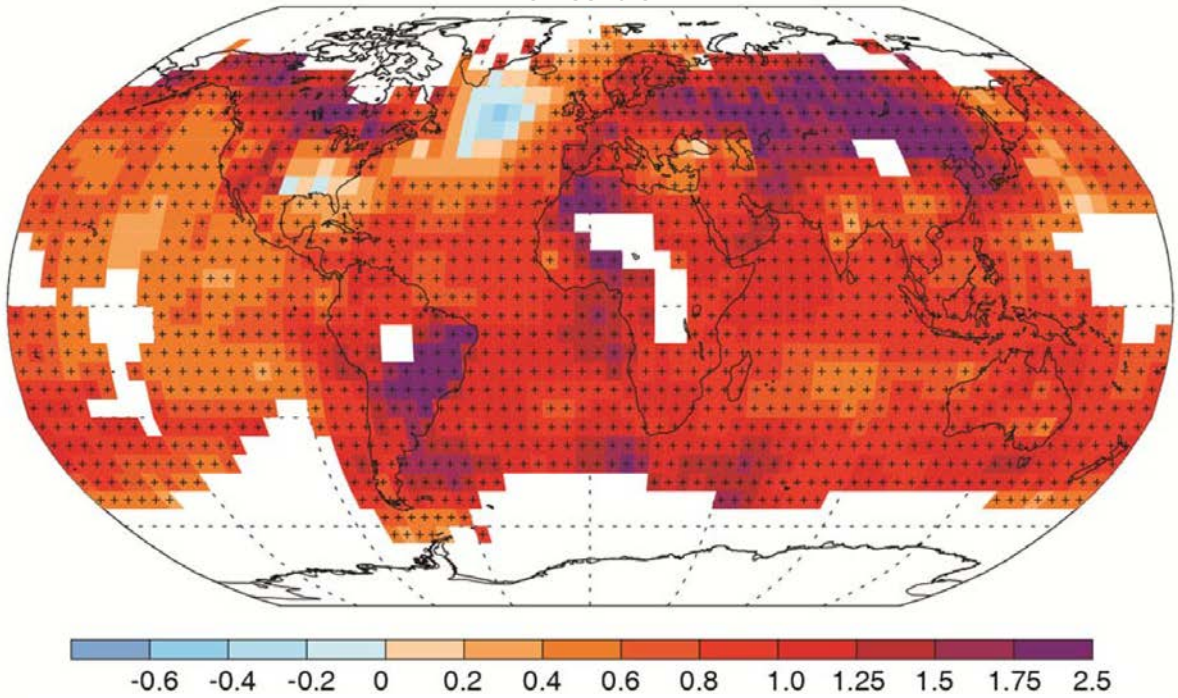


Temperature Difference 1901 to 2012 based on trend (°C)

Fig. SPM.2

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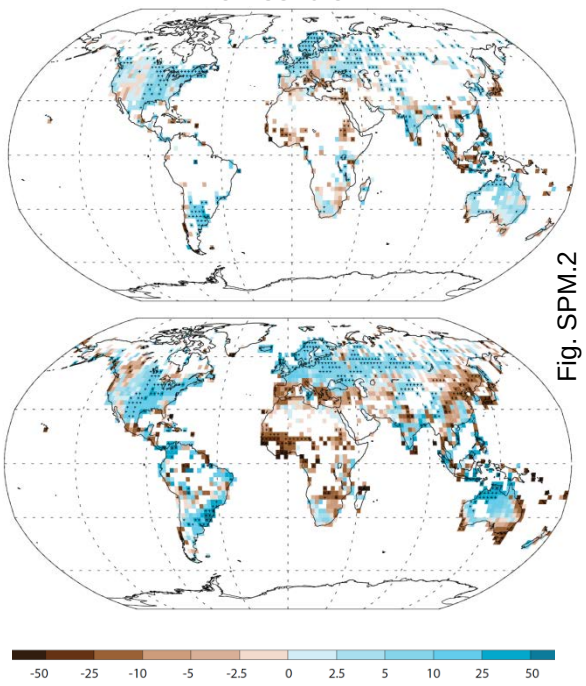
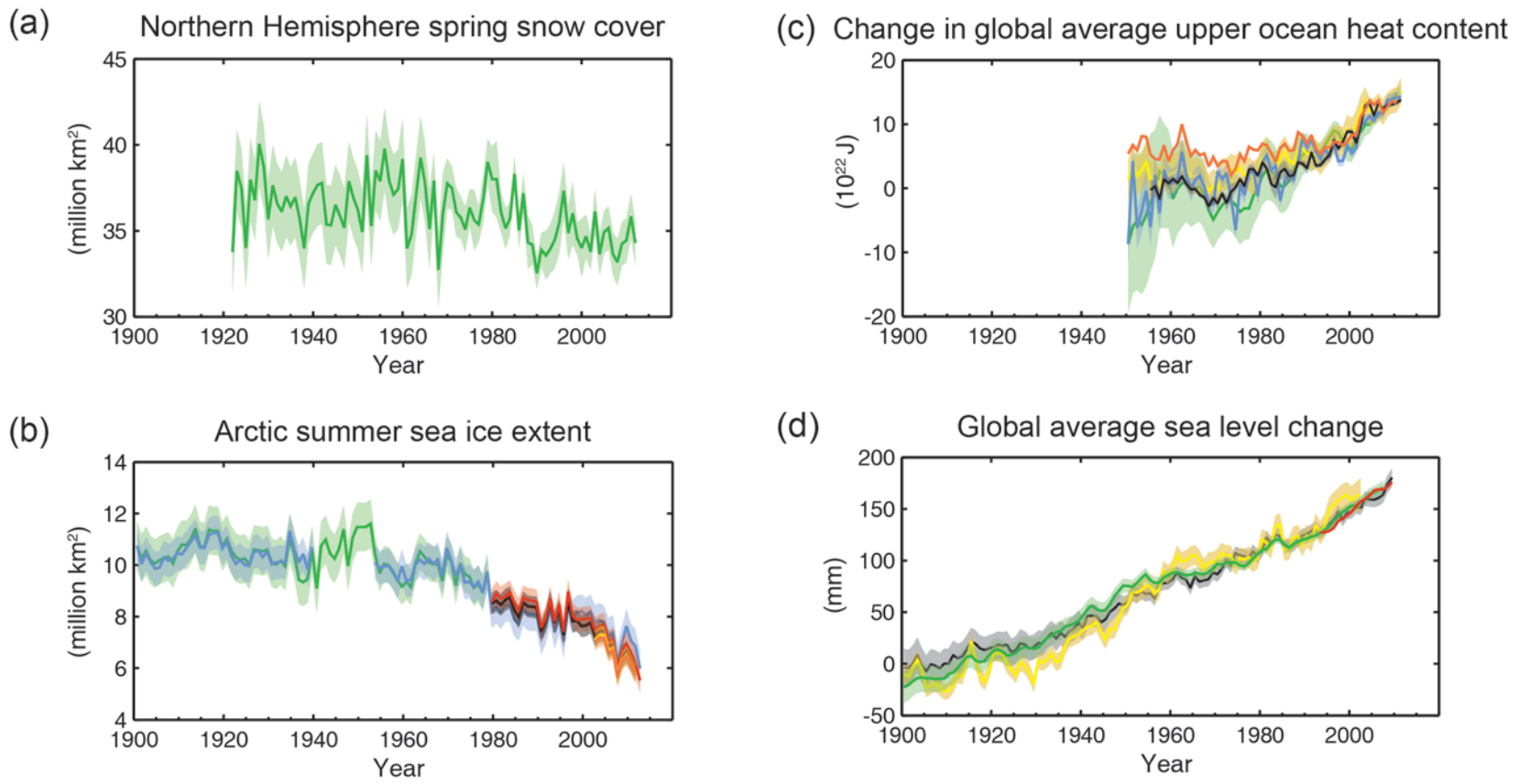



Precipitation Trend (mm/yr per decade)

# Warming of the climate system is unequivocal

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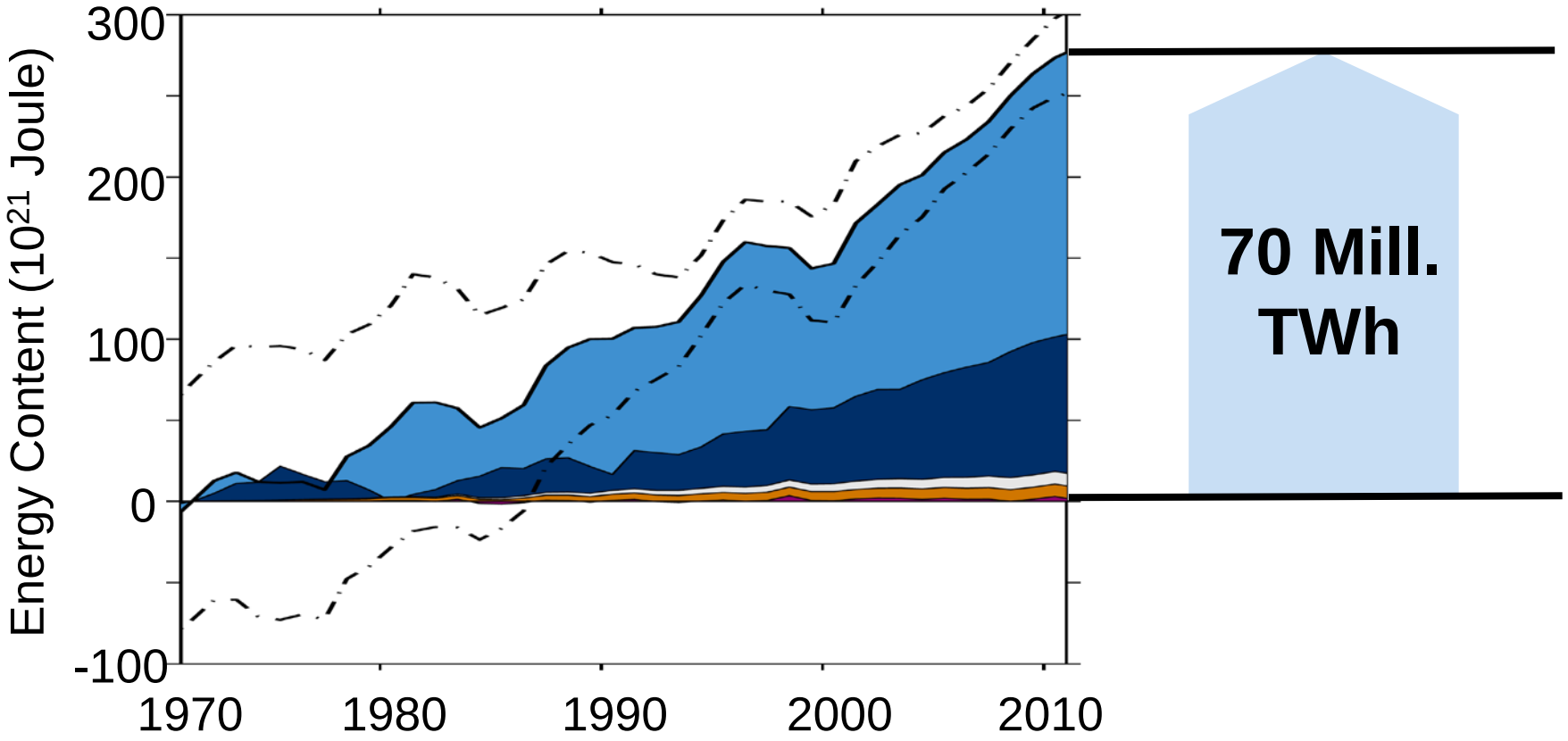


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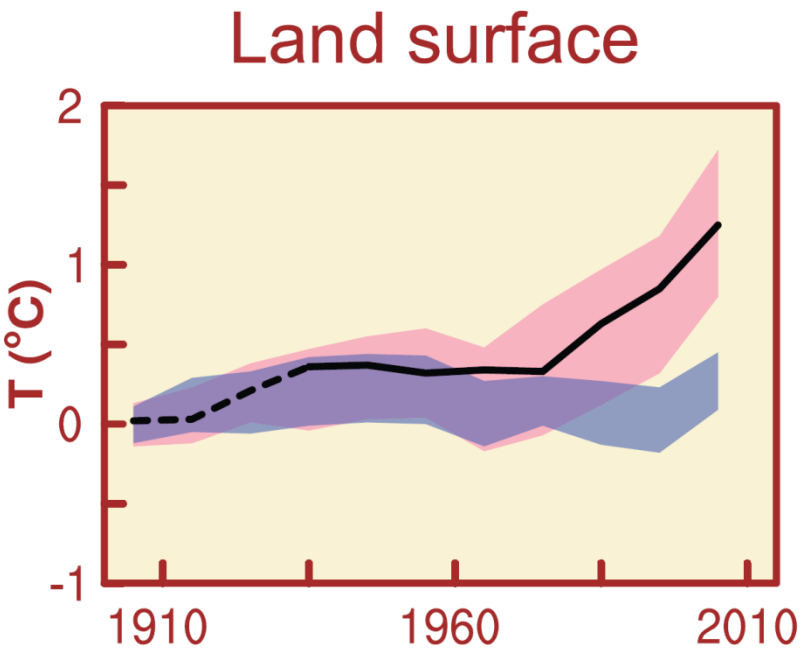
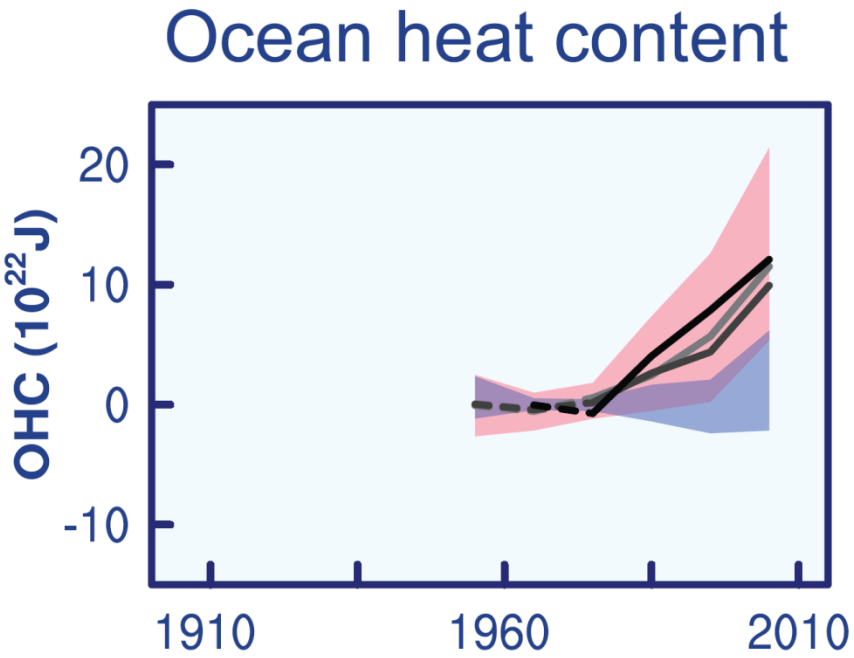



Human influence on the climate system is clear.

**Warming of 0.8 to 2.5°C**

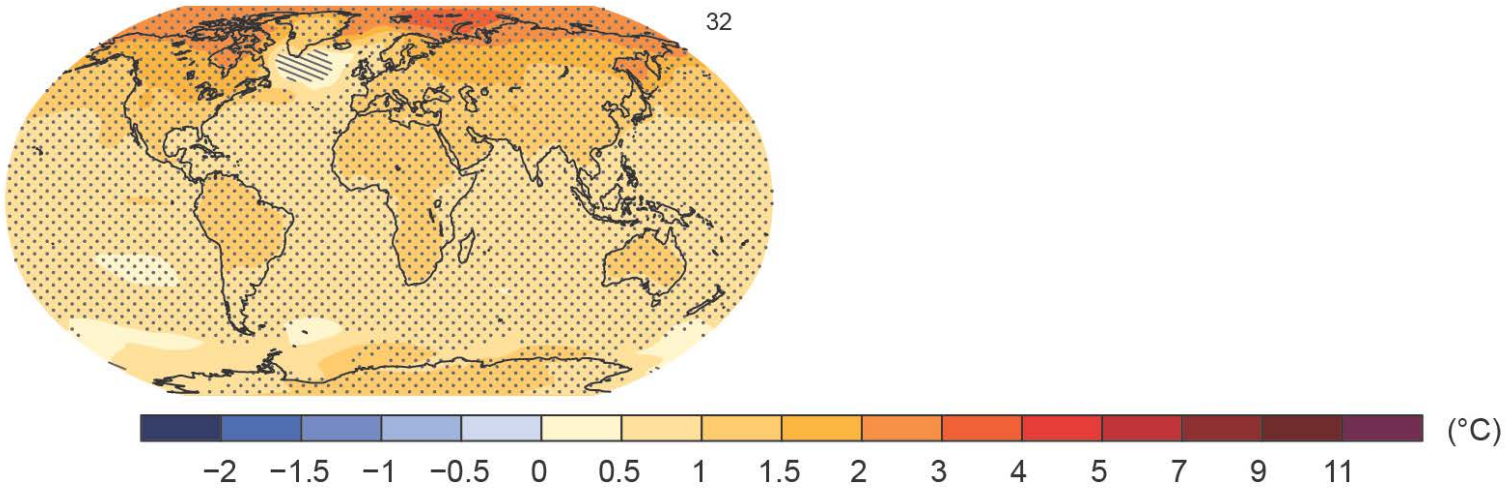
Any **climate target** implies a limited **carbon budget**

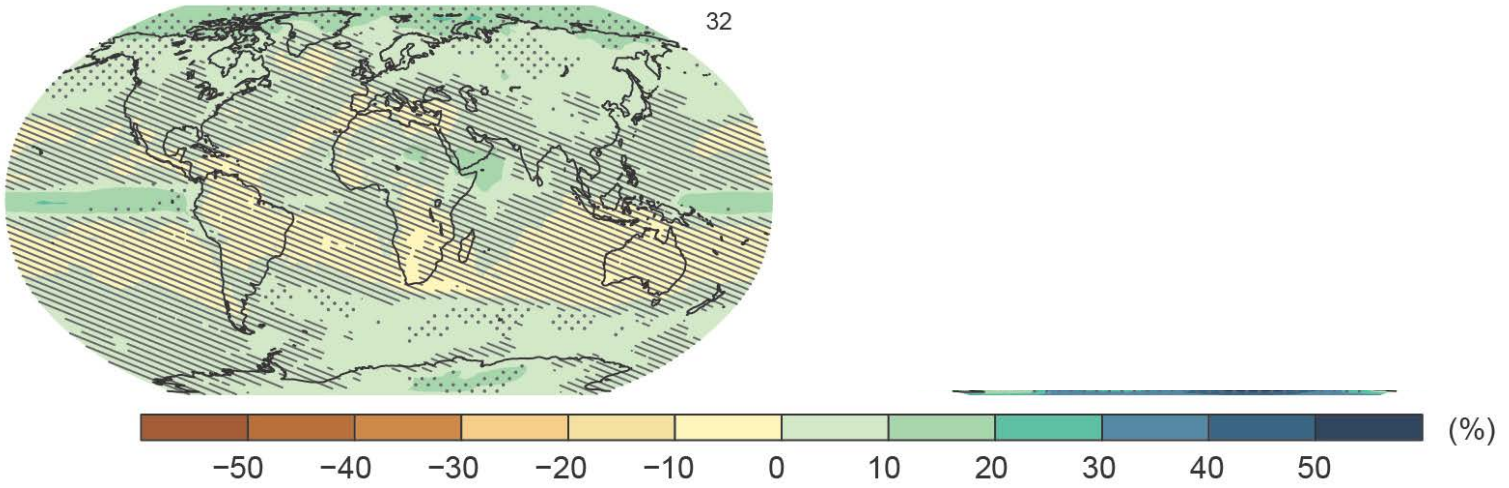
**1000 billion tons of carbon**

| | |
|---|---|
| $CO_2$ budget for 2°C target: | 790 bill t C |
| $CO_2$ emissions until 2013: | −535 bill t C |
| **Remaining $CO_2$ emissions:** | **255 bill t C** |
| ***$CO_2$ emissions in 2013:*** | ***9.9 bill t C*** |

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

# 2°C world

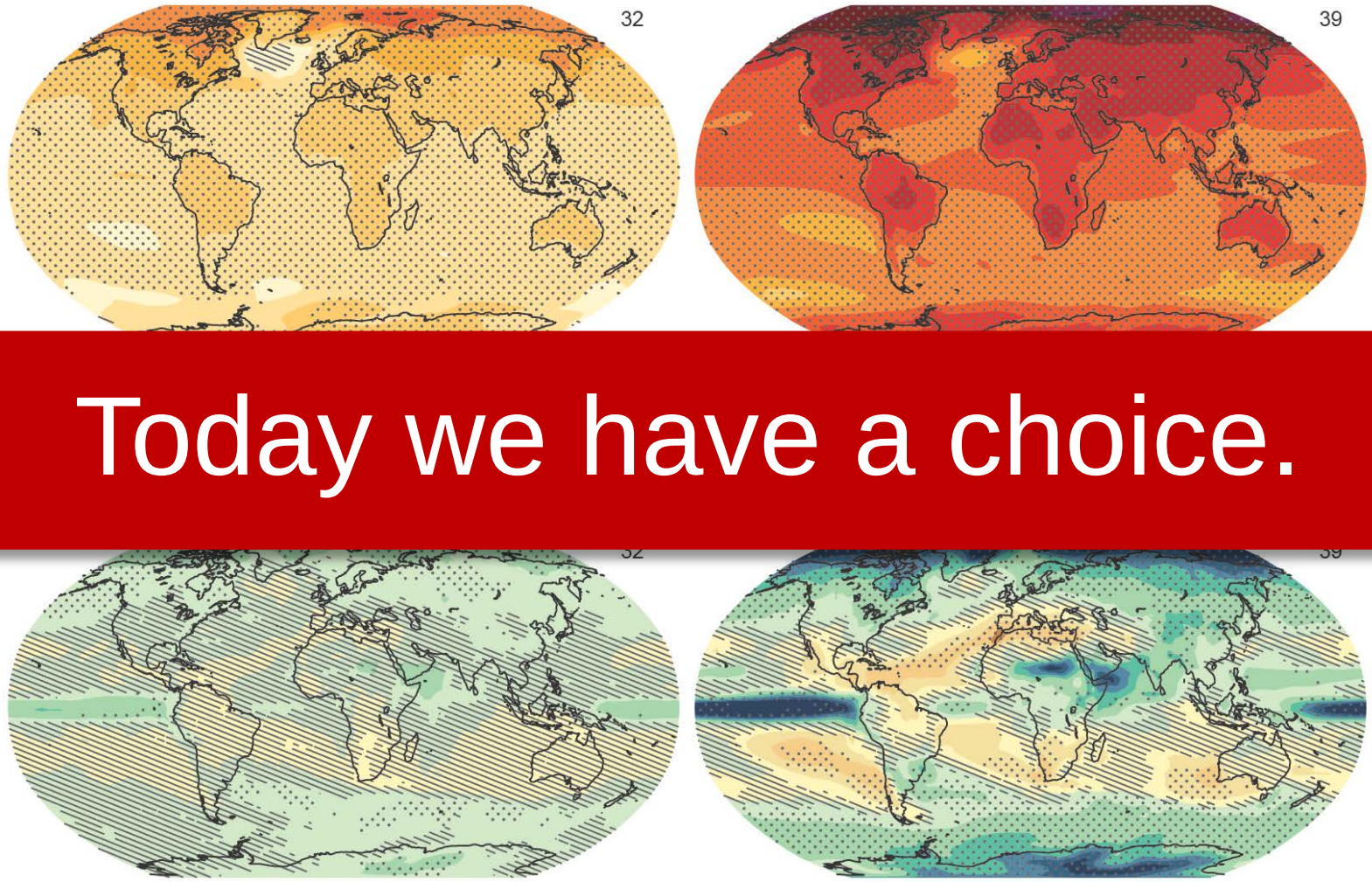



IPCC 2013, Fig. SPM.8

2°C world

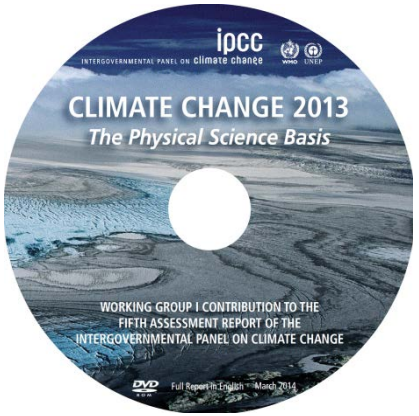
4.5°C world

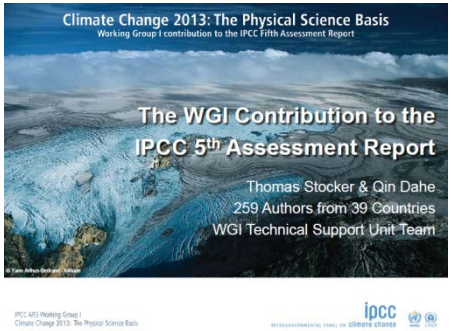



Today we have a choice.

IPCC 2013, Fig. SPM.8

# www.climatechange2013.org





IPCC AR5 Working Group I
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