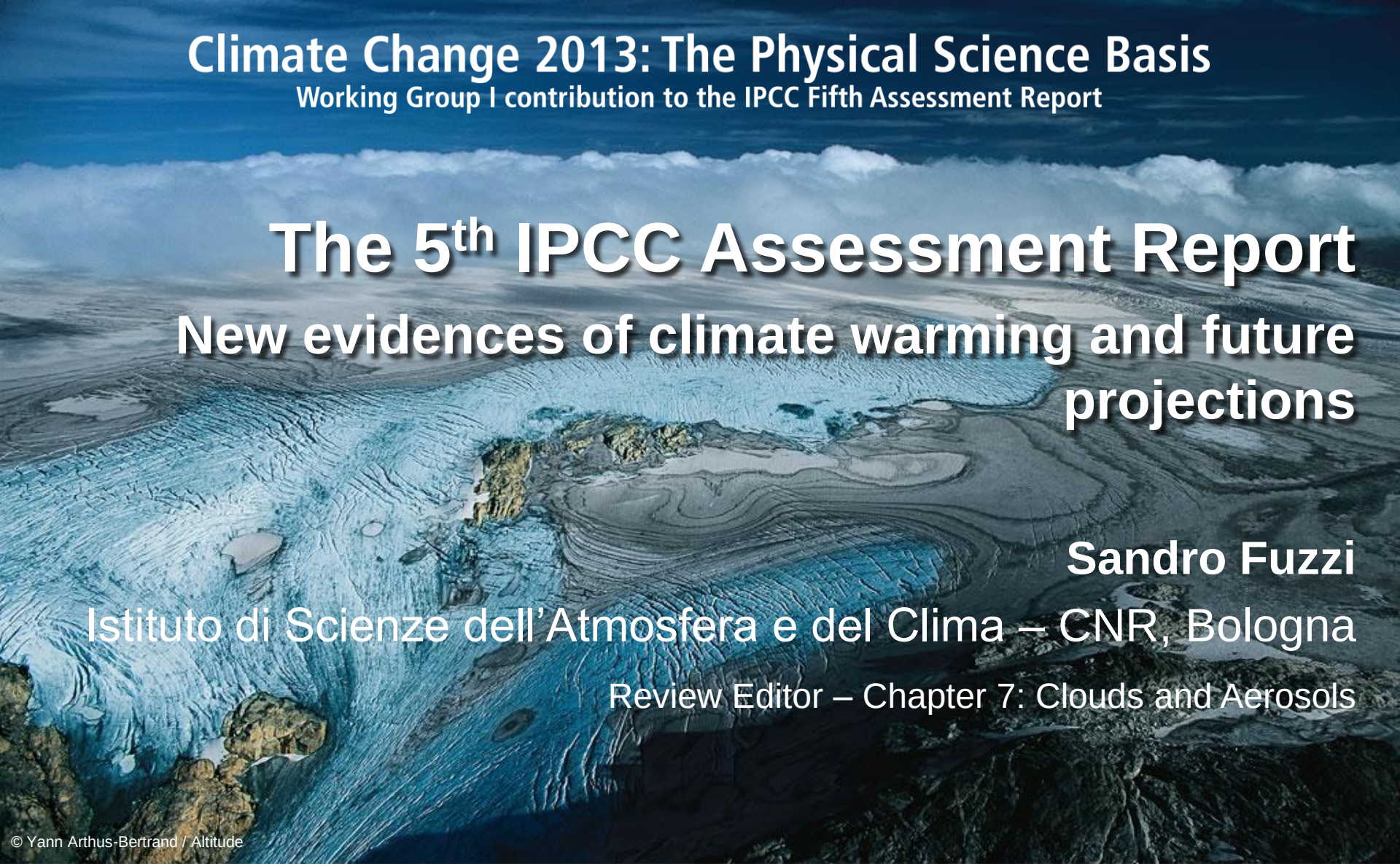

The 5th IPCC Assessment Report

New evidences of climate warming and future projections

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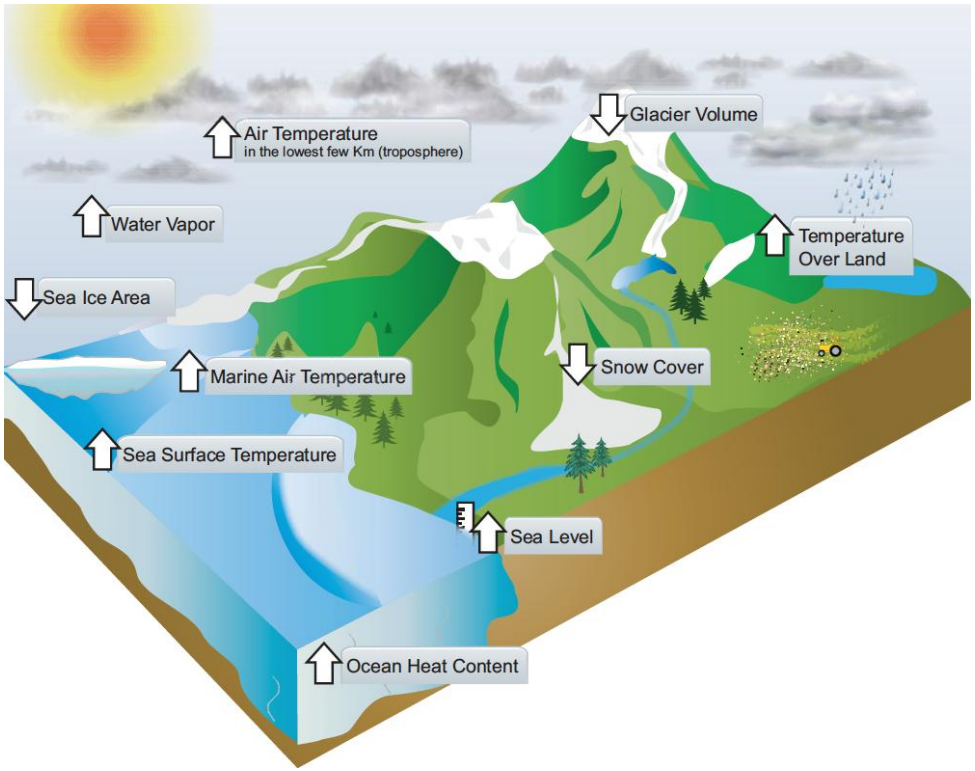
Review Editor – Chapter 7: Clouds and Aerosols

Observations of the climate system

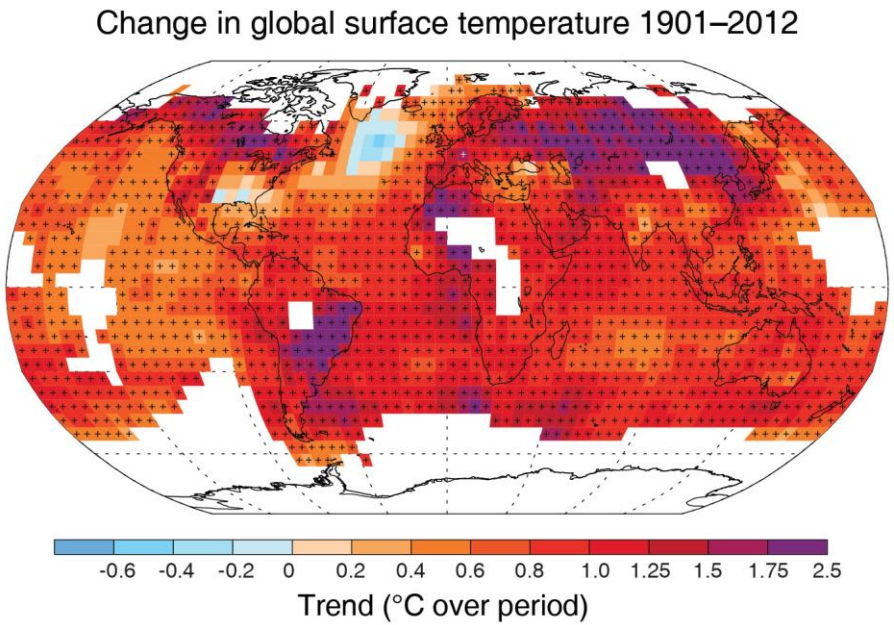
Since 1950 substantial changes have occurred within all compartments of the Earth's climate system and many of the observed changes are unprecedented over decades to millennia

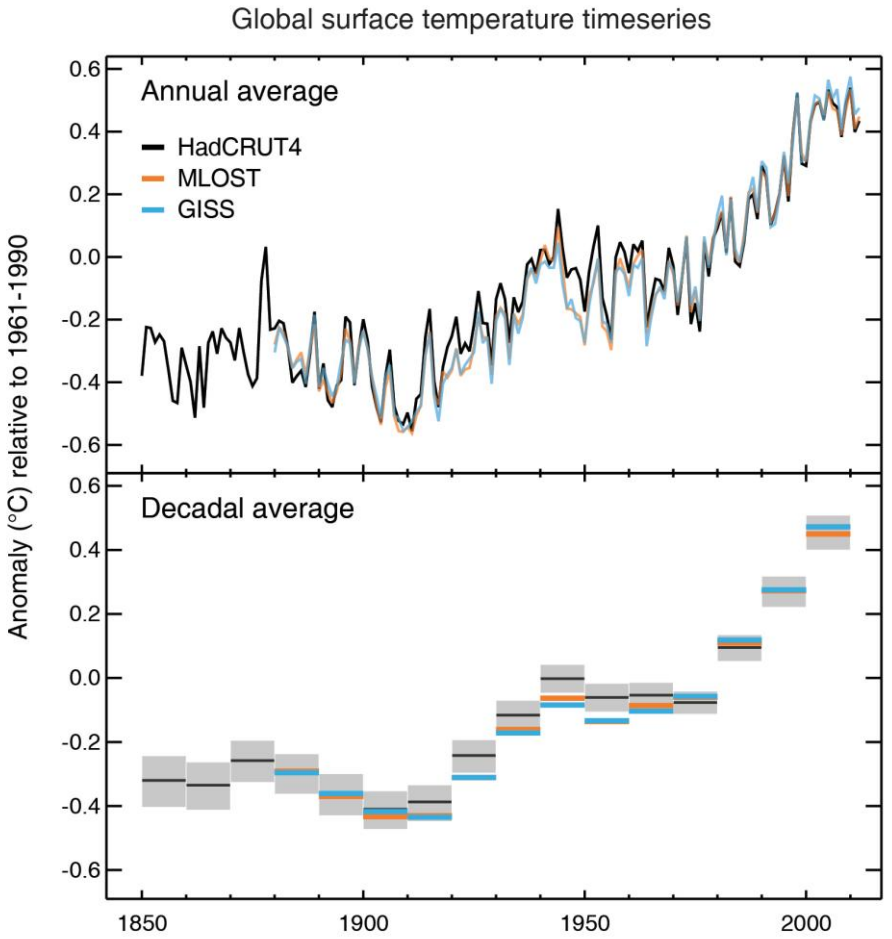


Warming of the climate system is "unequivocal"

The Earth's temperature

- Each of the last 3 decades has been successively warmer than any preceding decade since 1850
- In the NH, the last thirty years was likely the warmest period of the last 1400 years
- The global average temperature over the period 1880-2012 show a warming of **0.85 ° C**





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INTERGOVERNMENTAL PANEL ON climate change
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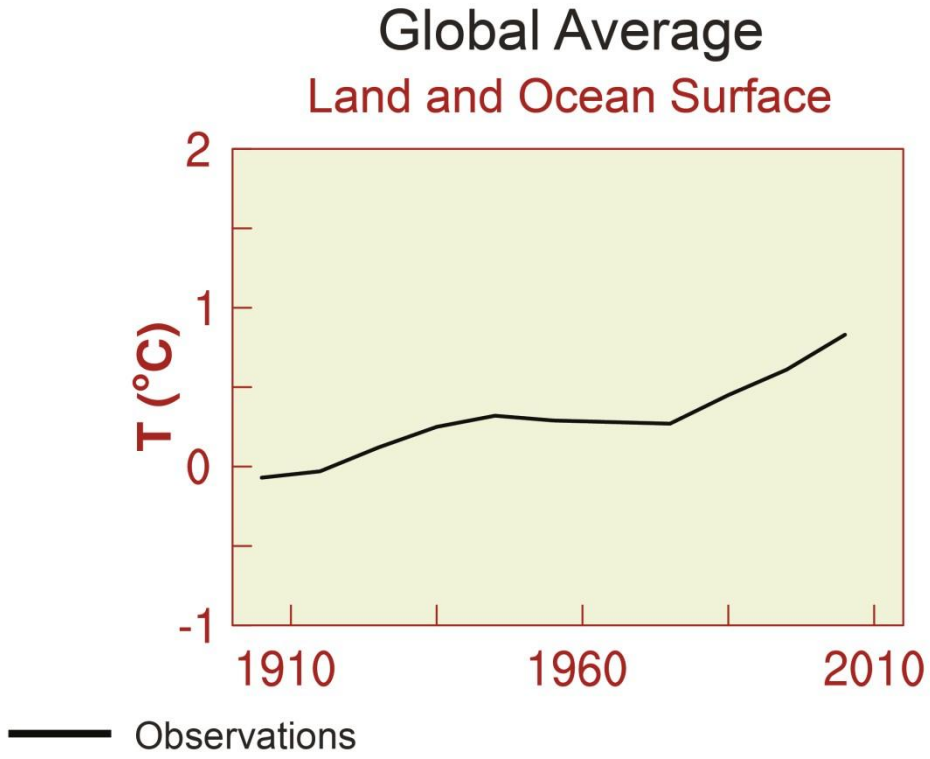
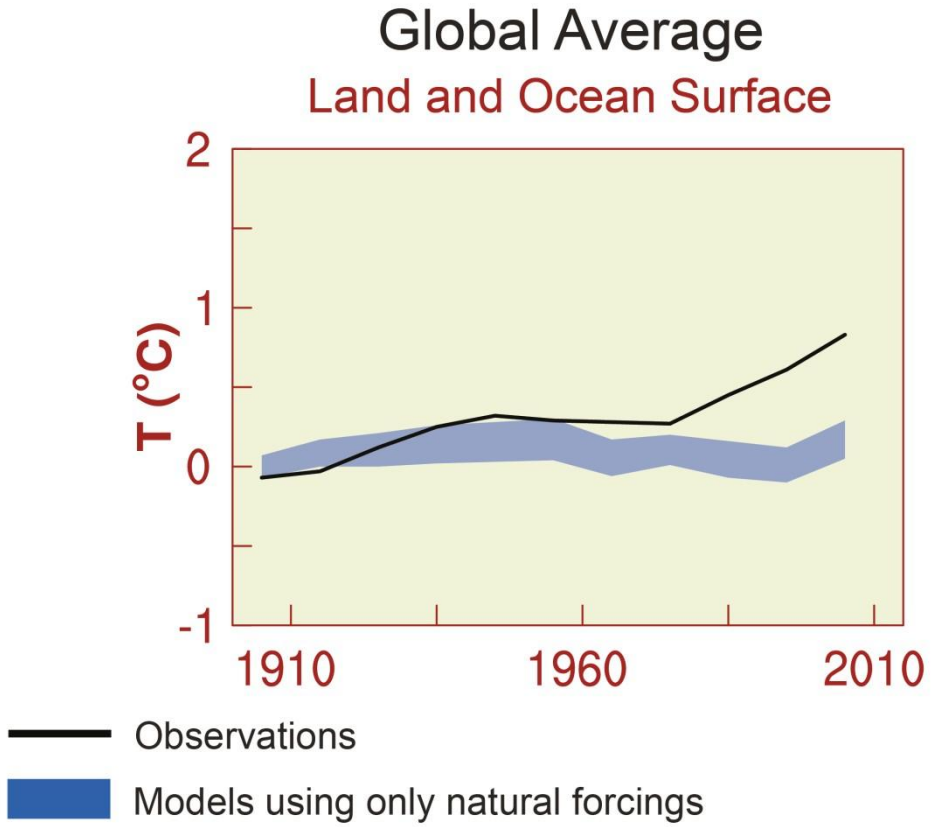
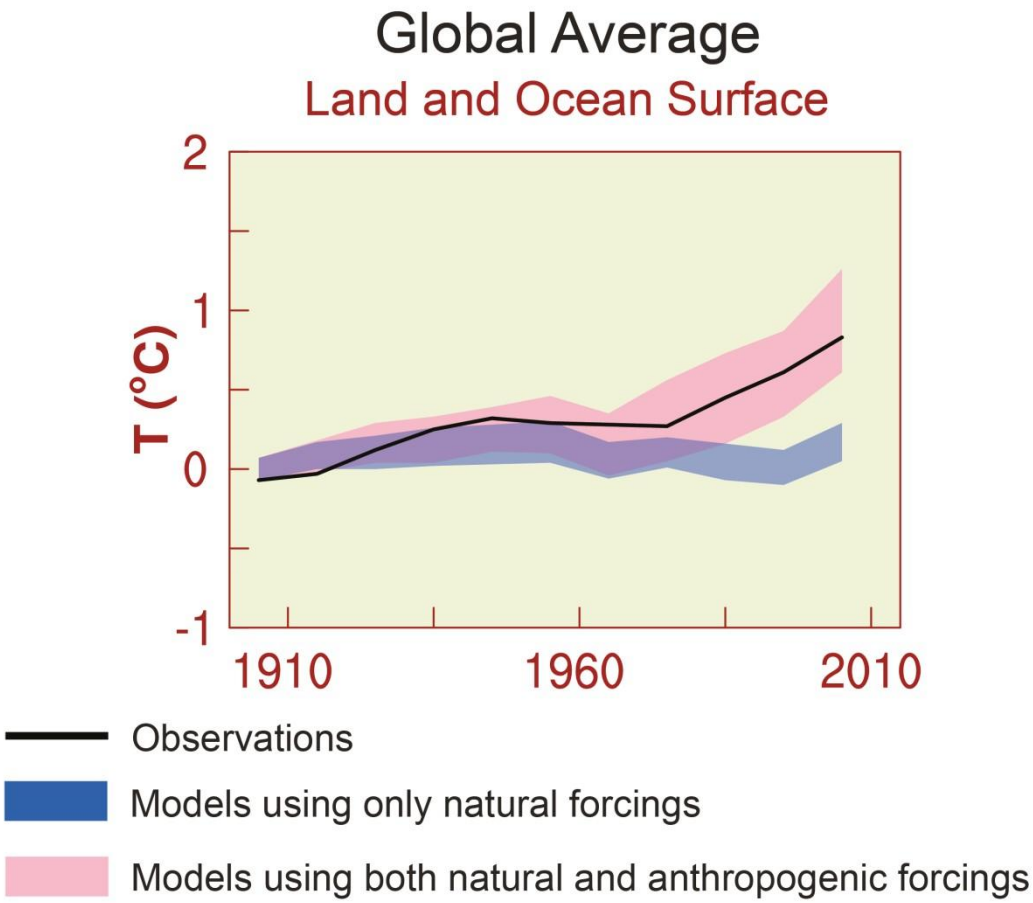
It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century



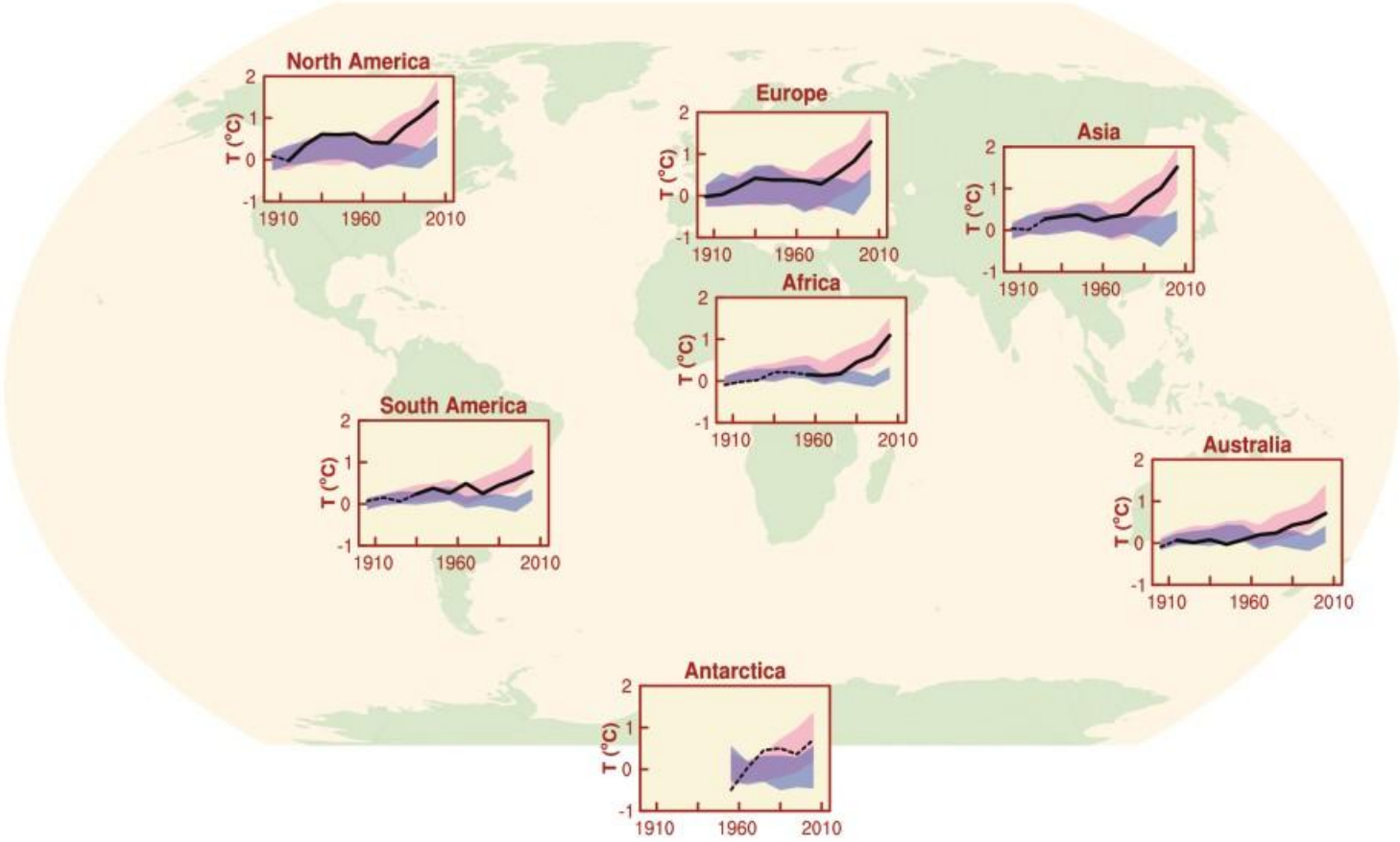
Climate warming is inconsistent with that expected from natural factors



Climate warming is consistent with simulations that include anthropogenic factors

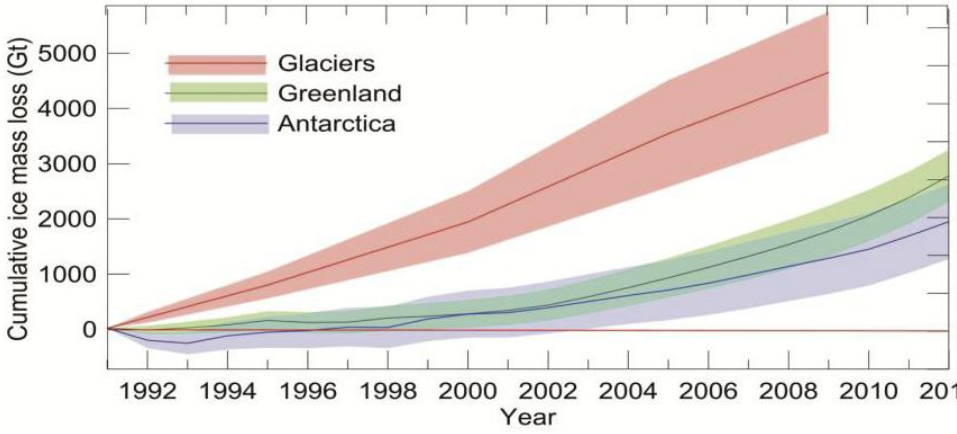


Regional differences



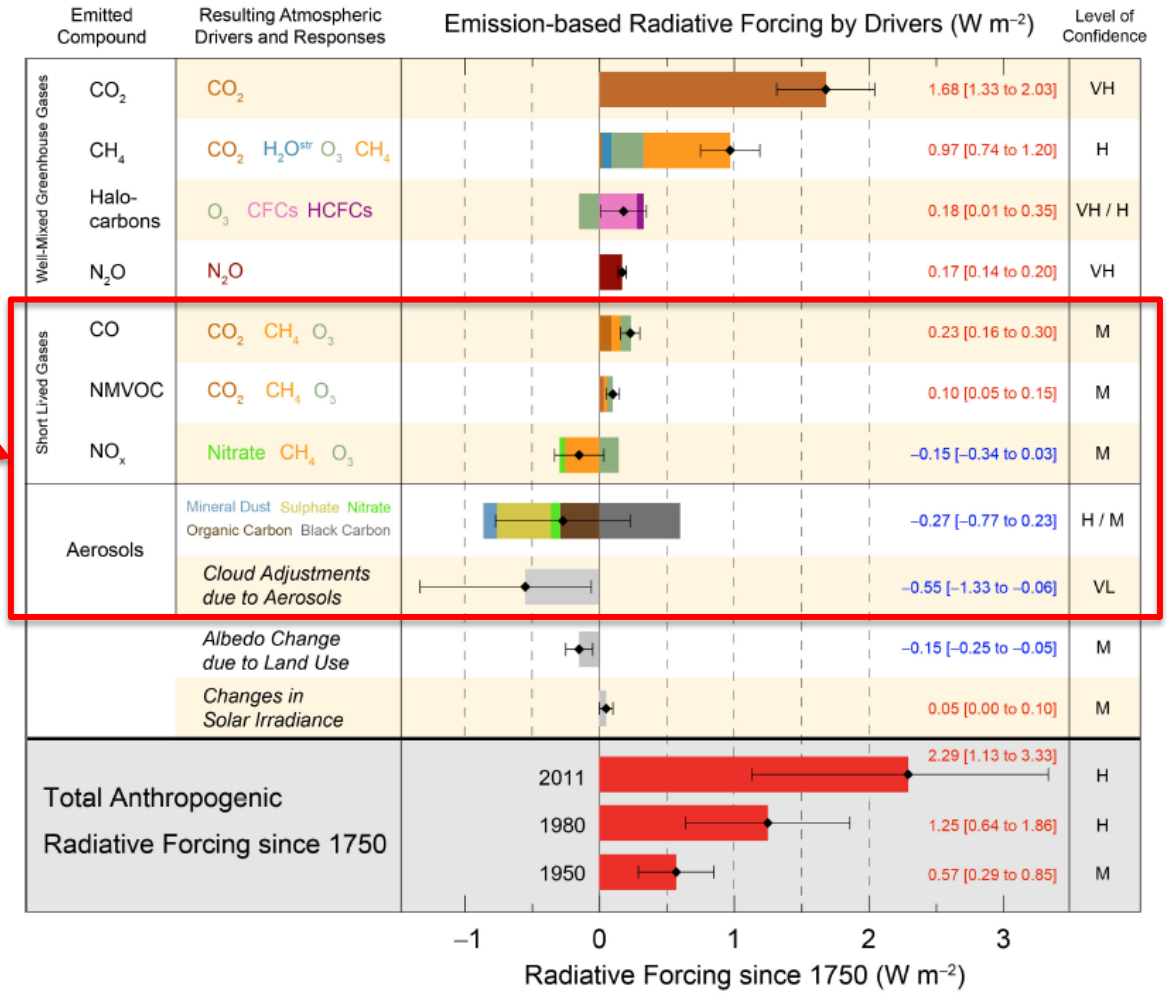
Fate of glaciers (IPCC Chpt. 4 – Cryosphere)

- In many mountain ranges around the world glaciers are disappearing (Canadian Arctic and Rocky Mountains, the Andes, Patagonia, the European Alps, the Tien Shan, Altai and Terskey Alatoo, tropical mountains in South America, Africa and Asia)
- In these regions, more than 600 glaciers have disappeared over the past decades
- Even if there is no further warming, many more glaciers will disappear
- It is also likely that some mountain ranges will lose most, if not all, of their glaciers



Anthropogenic emissions and their radiative forcing

atmospheric pollutants



Air quality and climate change are two sides of the same coin

Anthropogenic sources of GHG (energy production, transportation, agriculture, industry, …) also emit pollutants that affect air quality

CO_2
NO_X
CO
aerosols

For the first time, the connection air quality-climate is taken into account in an IPCC Report

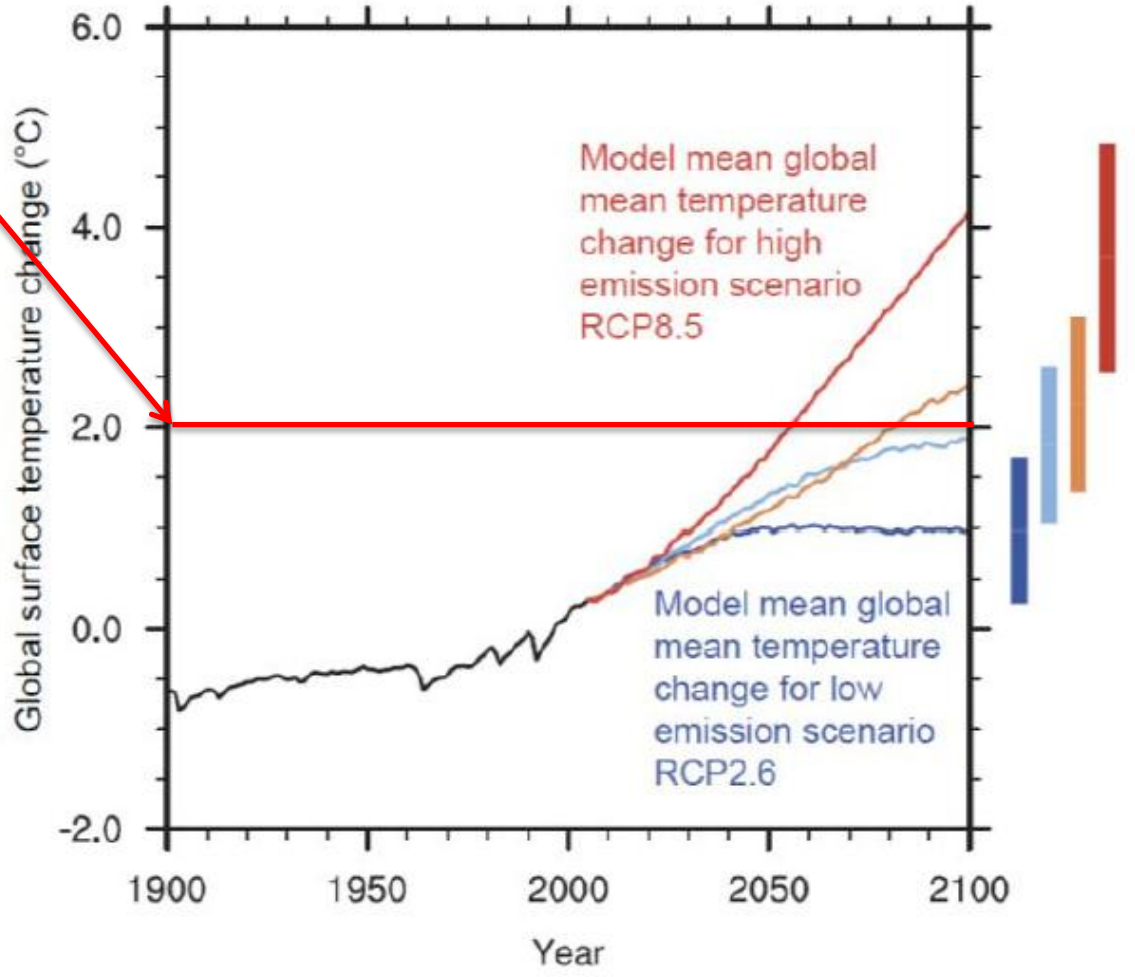
→

Need for an integrated assessment for emission abatement strategies

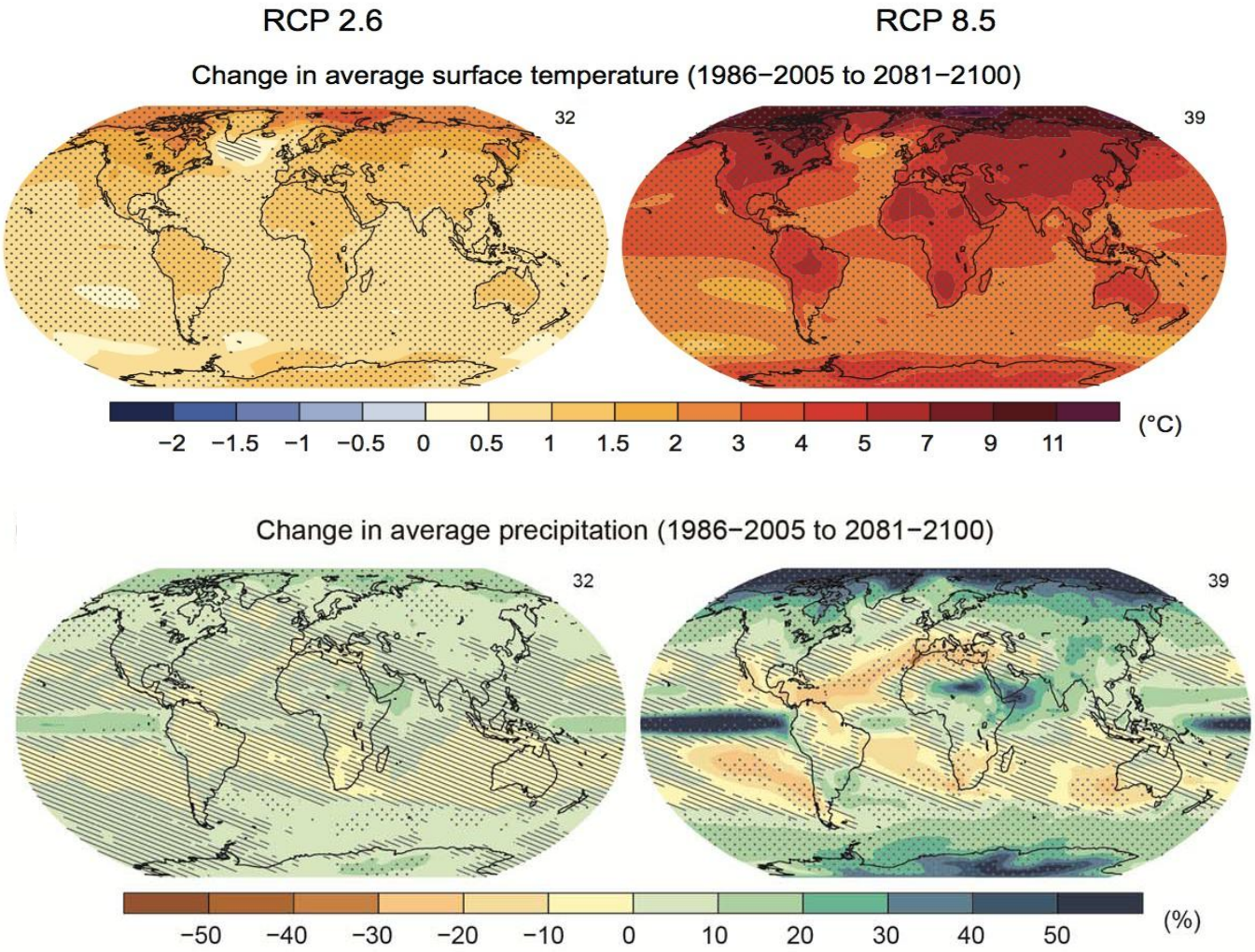
A hot future

A temperature increase that would possibly prevent dangerous anthropogenic interference with the climate system

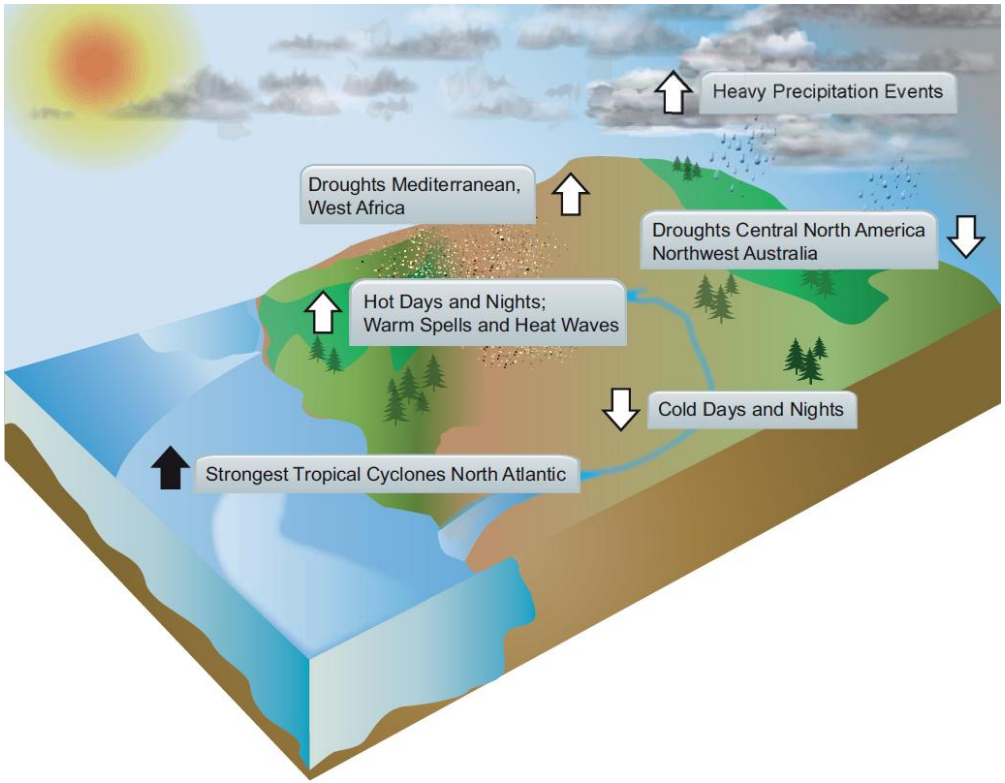
Most aspect of climate change will persist for centuries even if emissions of GHG are stopped
Climate mitigation represents a multi-century commitment



Regional variability of the projected changes



Observed changes in climate extremes



Climate Change 2013: The Physical Science Basis

Working Group I contribution to the IPCC Fifth Assessment Report

Further Information

www.climatechange2013.org

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