The Copenhagen Diagnosis

Updating the World on the Latest Climate Science

2009

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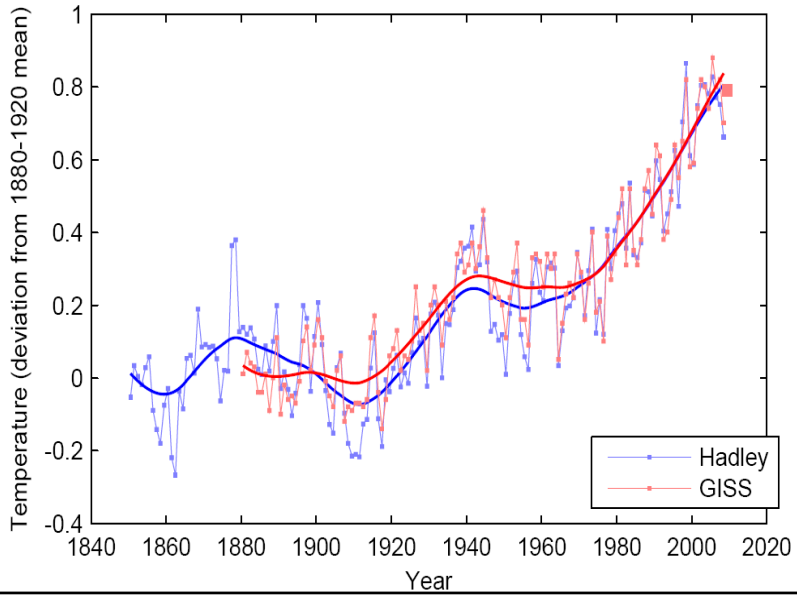
Globale Temperatur



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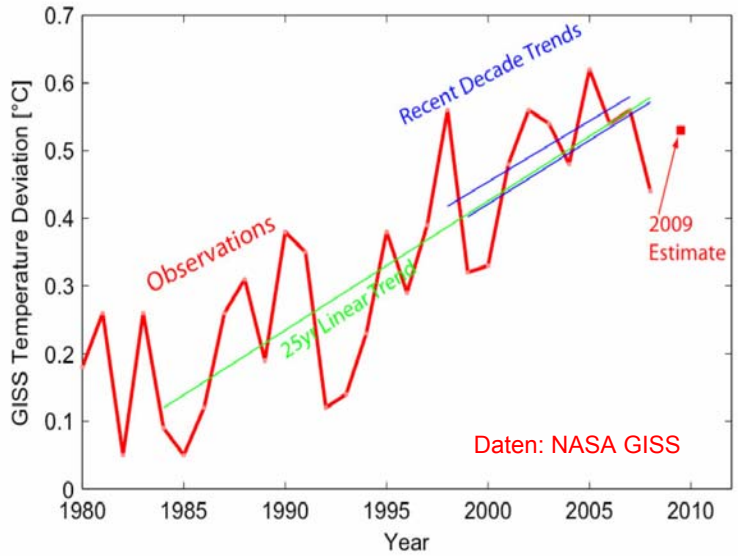
Globale Temperatur



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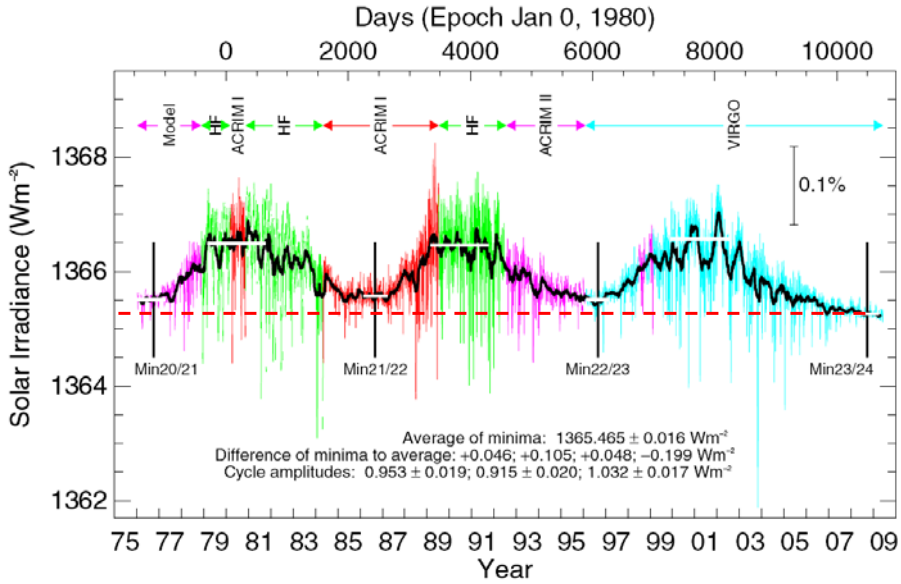
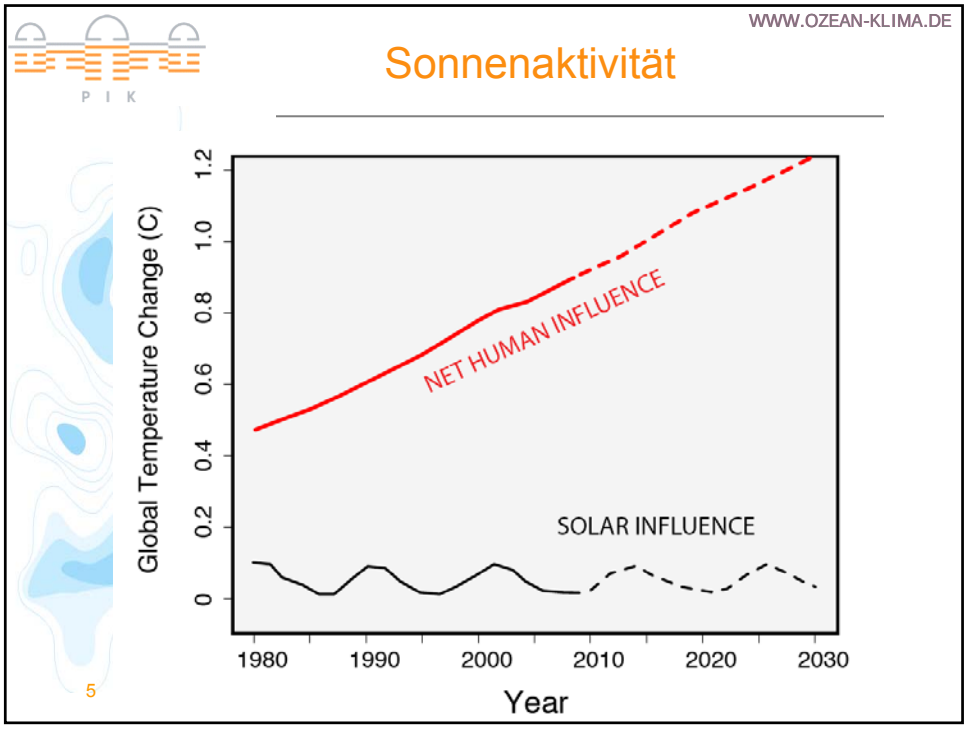
Sonnenaktivität

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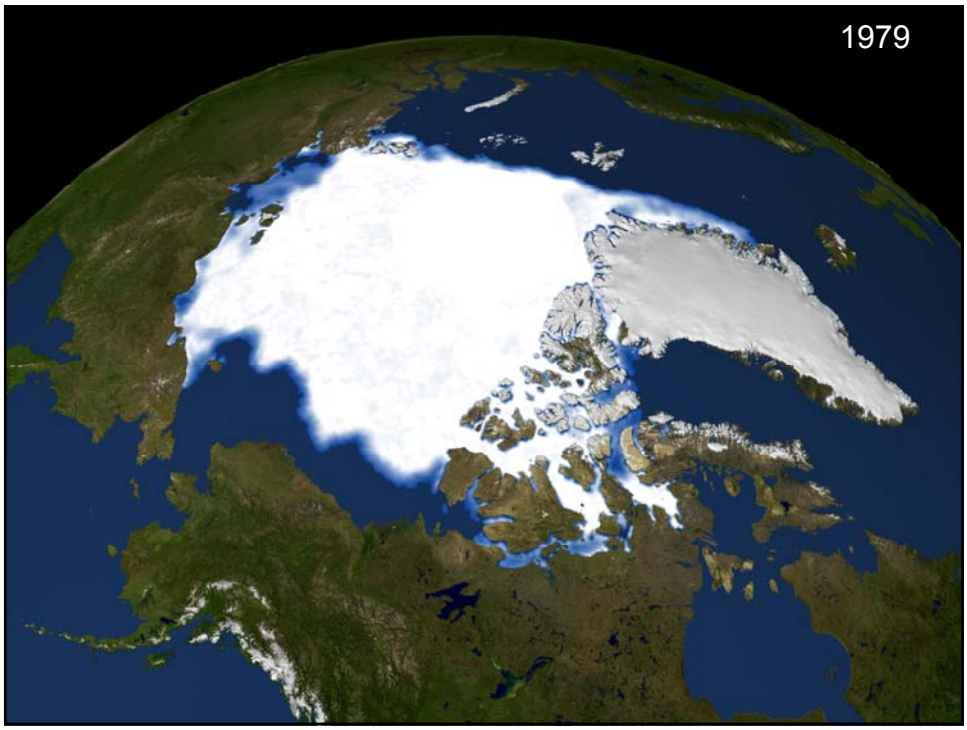
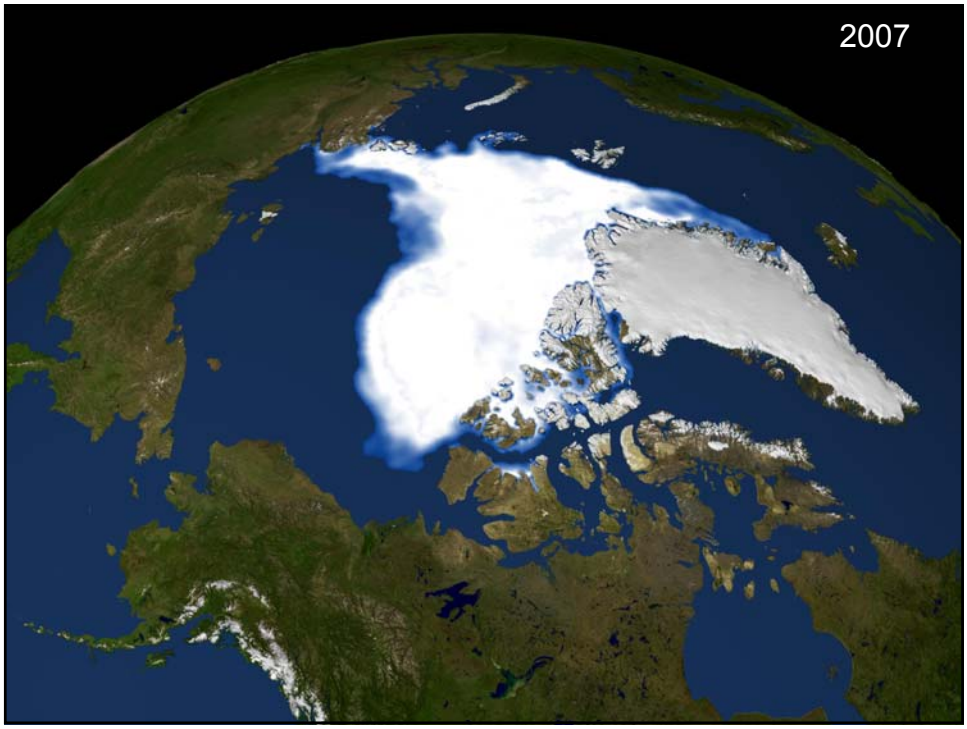
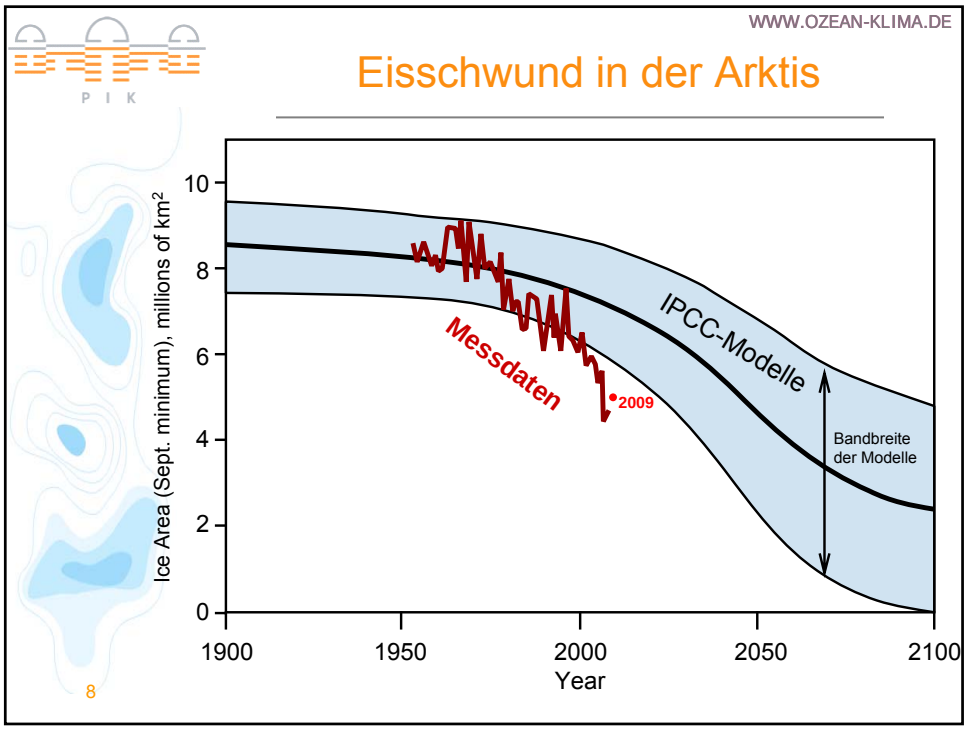
Sonnenaktivität
P I K
Global Temperature Change (C)
0
0.2
0.4
0.6
0.8
1.0
1.2
NET HUMAN INFLUENCE
SOLAR INFLUENCE
1980
1990
2000
2010
2020
2030
Year
5


1979


2007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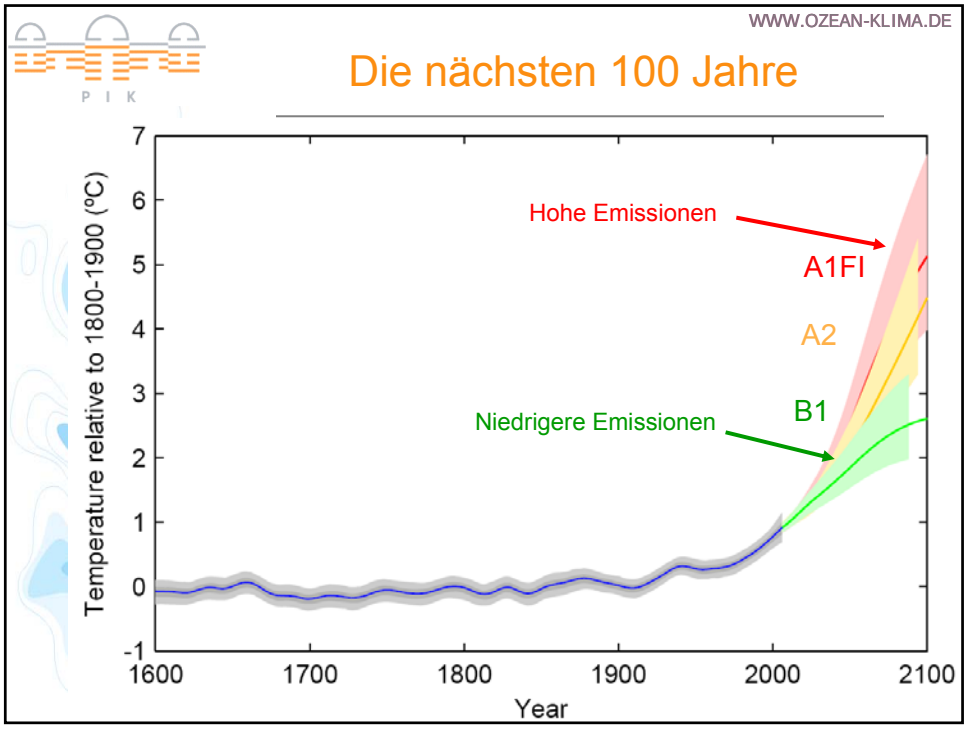
P I K
Eisschwund in der Arktis
Ice Area (Sept. minimum), millions of km²
10
8
6
4
2
0
1900
1950
2000
2050
2100
Year
Messdaten
2009
IPCC-Modelle
Bandbreite
der Modelle
8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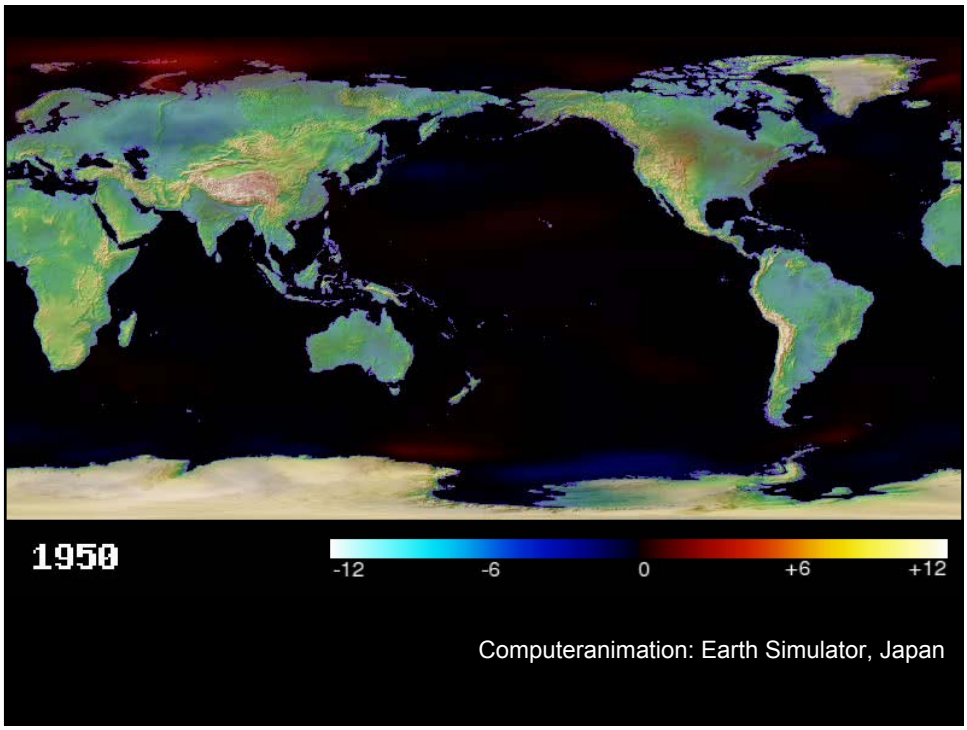
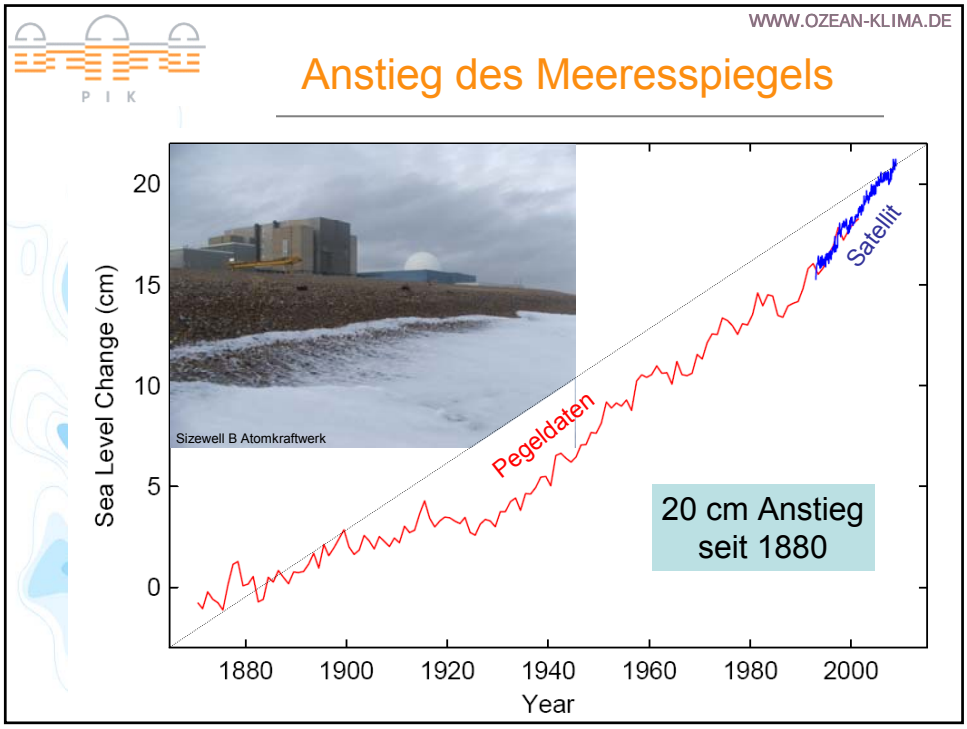
P I K
Die nächsten 100 Jahre
Temperature relative to 1800-1900 (°C)
7
6
5
4
3
2
1
0
-1
1600
1700
1800
1900
2000
2100
Year
Hohe Emissionen
A1FI
A2
B1
Niedrigere Emissionen


1950
-12
-6
0
+6
+12
Computeranimation: Earth Simulator, Japan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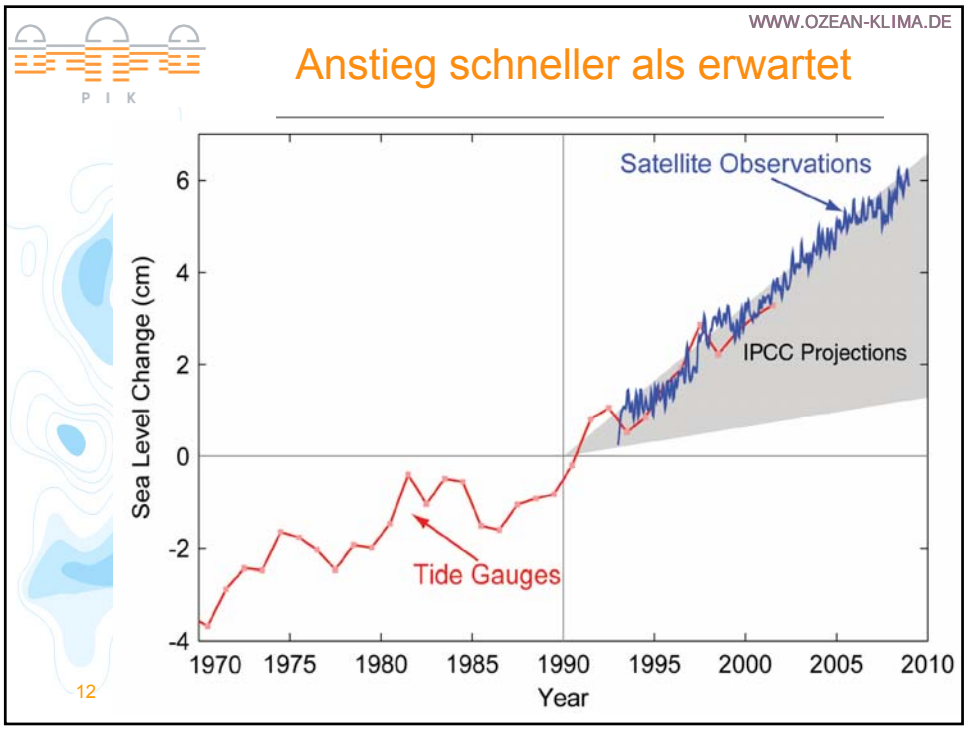
Anstieg des Meeresspiegels
Sea Level Change (cm)
Year
Sizewell B Atomkraftwerk
Pegeldaten
Satellit
20 cm Anstieg seit 1880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Anstieg schneller als erwartet
Sea Level Change (cm)
Year
Satellite Observations
IPCC Projections
Tide Gauges
12

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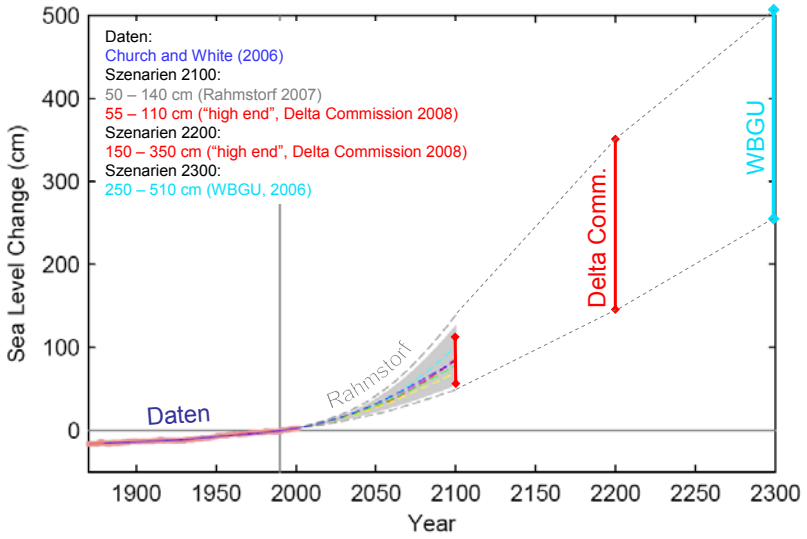
Meeresspiegel: Zukunft



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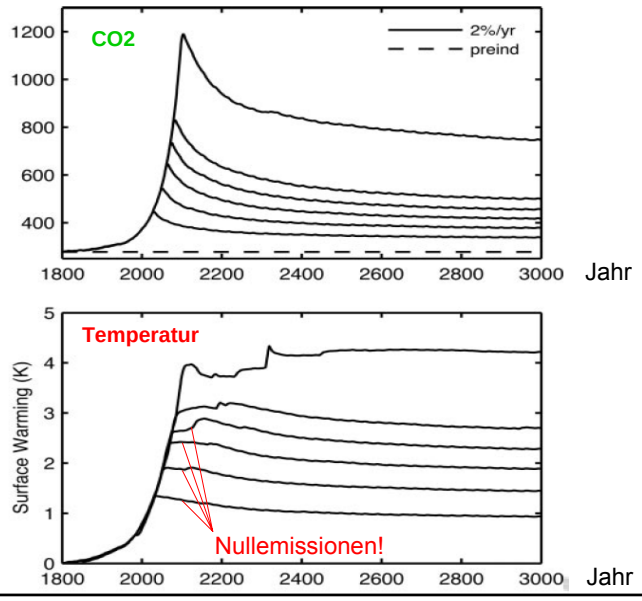
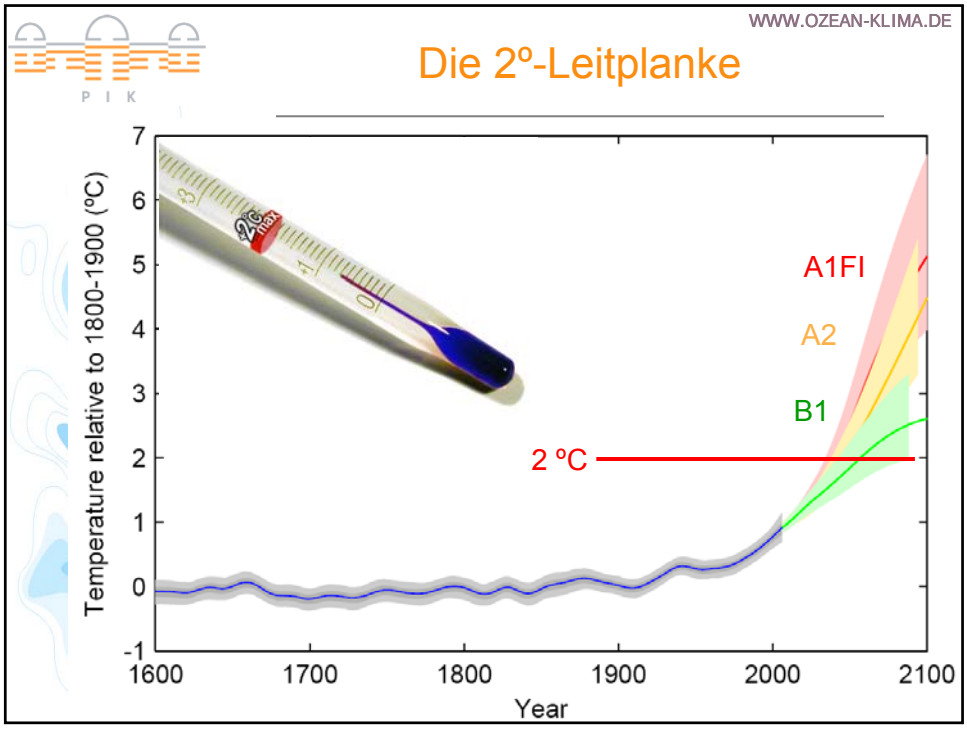
Erwärmung praktisch irreversibel!



Solomon et al., PNAS 2009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Die 2º-Leitplanke
P I K
Temperature relative to 1800-1900 (ºC)
7
6
5
4
3
2
1
0
-1
1600
1700
1800
1900
2000
2100
Year
A1FI
A2
B1
2 ºC

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Was können wir tun?
P I K
Ich sehe noch
ein Zeitfenster
KLIMAWAHRSAGE
16

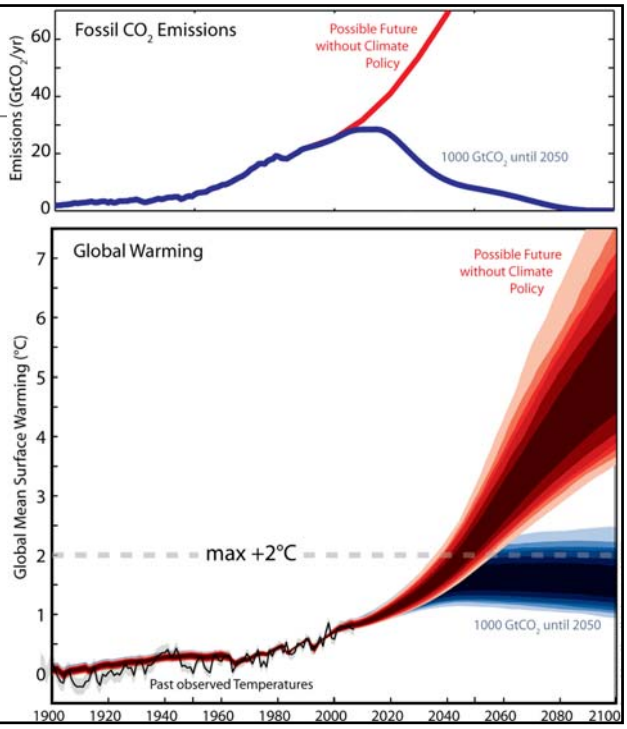
- Um unter 2° zu bleiben
  (mit Wahrscheinlichkeit 75%)
  können wir bis 2050 noch rund

  700 Gt CO_2

  ausstoßen.

- Bei der derzeitigen Rate haben wir dieses Kontingent in weniger als 20 Jahren verbraucht.

Meinshausen et al 2009



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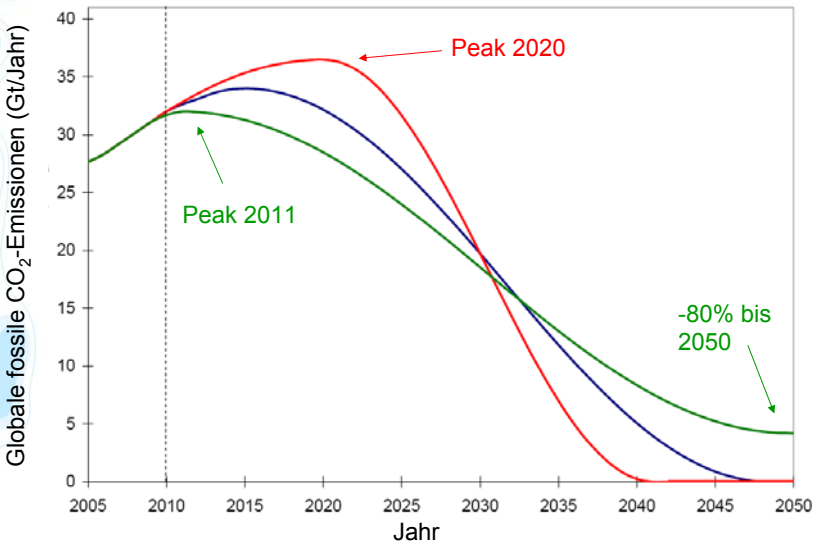
Wettlauf gegen die Zeit

Annahmen: 2/3 Wahrscheinlichkeit, unter 2 °C zu bleiben
Fossiles CO_2-Budget 2010-2050: 750 Gt (Meinshausen et al. 2009)



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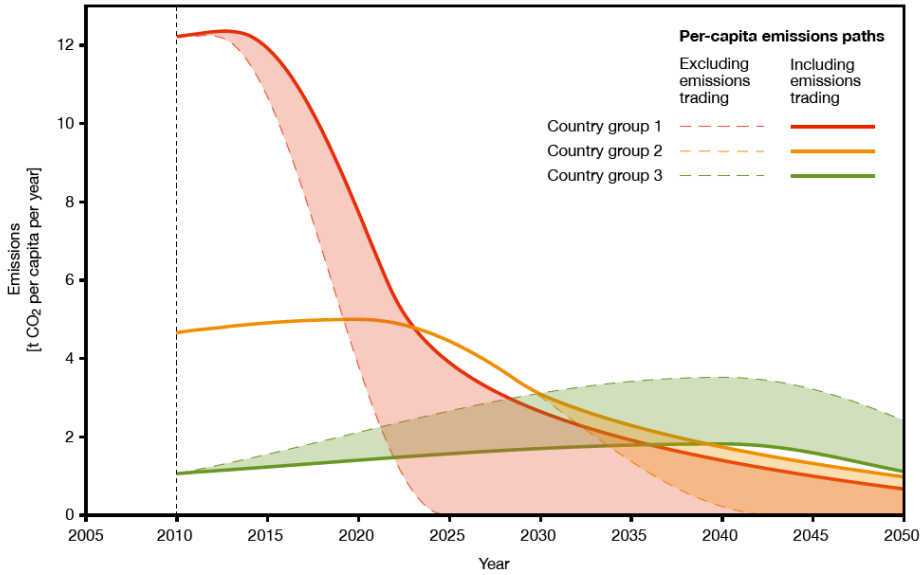
Der Budgetansatz