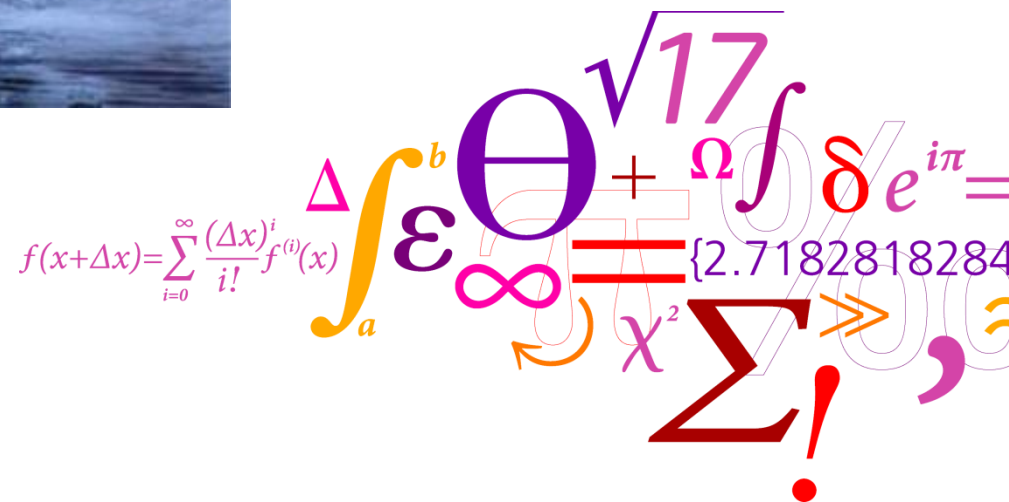


# Climate Science and Politics

Jens Olaf Pepke Pedersen



# Jens Olaf Pepke Pedersen



- **Ph.D. in experimental atomic physics**
- **Electron-electron correlation in atomic collision**
- **Laboratory experiments on reactions simulating conditions on Titan**
- **Carbon cycle in ocean modelling**
- **Field work on outflow of North Atlantic Deep Water around Faroe Islands**
- **Laboratory experiments on aerosol nucleation induced by cosmic rays**

# Climate problems:

- **Climate is changing (warmer)**
- **May have to do something**
- **Why is climate changing?**



**The Arctic ocean is warming up, icebergs are growing scarcer and in some places the seals are finding the water too hot ...**

**Reports ... all point to a radical change in climate conditions and hitherto unheard-of temperatures in the Arctic zone. Exploration expeditions report that scarcely any ice has been met with as far north as 81 degrees 29 minutes.**

**... at many points well known glaciers have entirely disappeared. Very few seals and no white fish are found in the eastern Arctic, while vast shoals of herring and smelts, which have never before ventured so far north, are being encountered in the old seal fishing grounds.**

**Washington Post 1922**

# Climate change:

- **Human (greenhouse gases, albedo, particles)**
- **Natural (vulcanos, Sun)**
- **Internal variability (the rest)**



# Climate problems:

- **Only one climate system**
  - **Cannot make (reproducible) eksperiments in the climate system**
  - **Conclusions basered on models, that cannot be falsified**
  - **Climate system extremely complex (numerous approximations)**
  - **Lack of systematic data**



# SKY I



# CLOUD at CERN





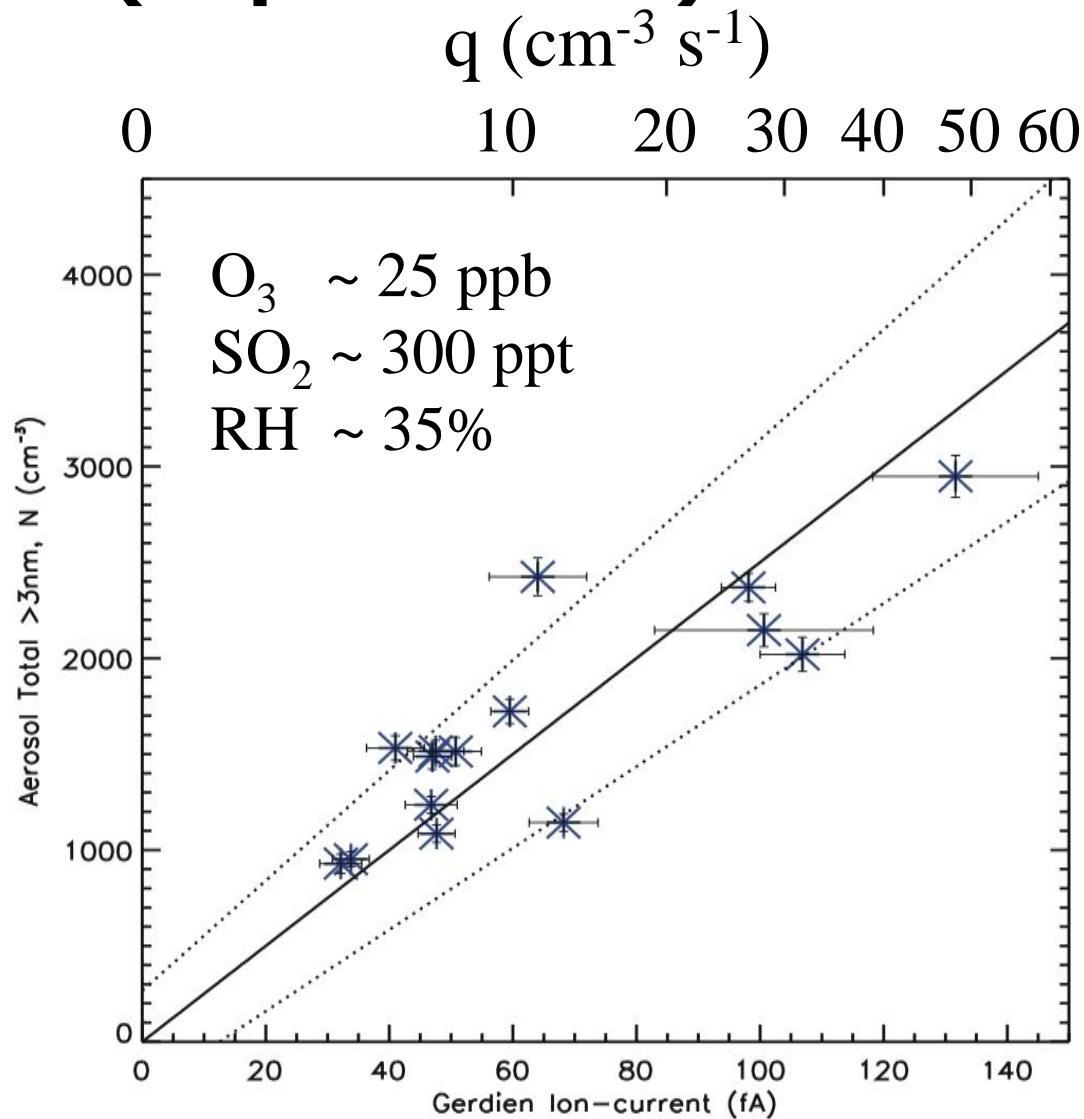
# SKY @ Boulby



# SKY @ Boulby (outside laboratory)



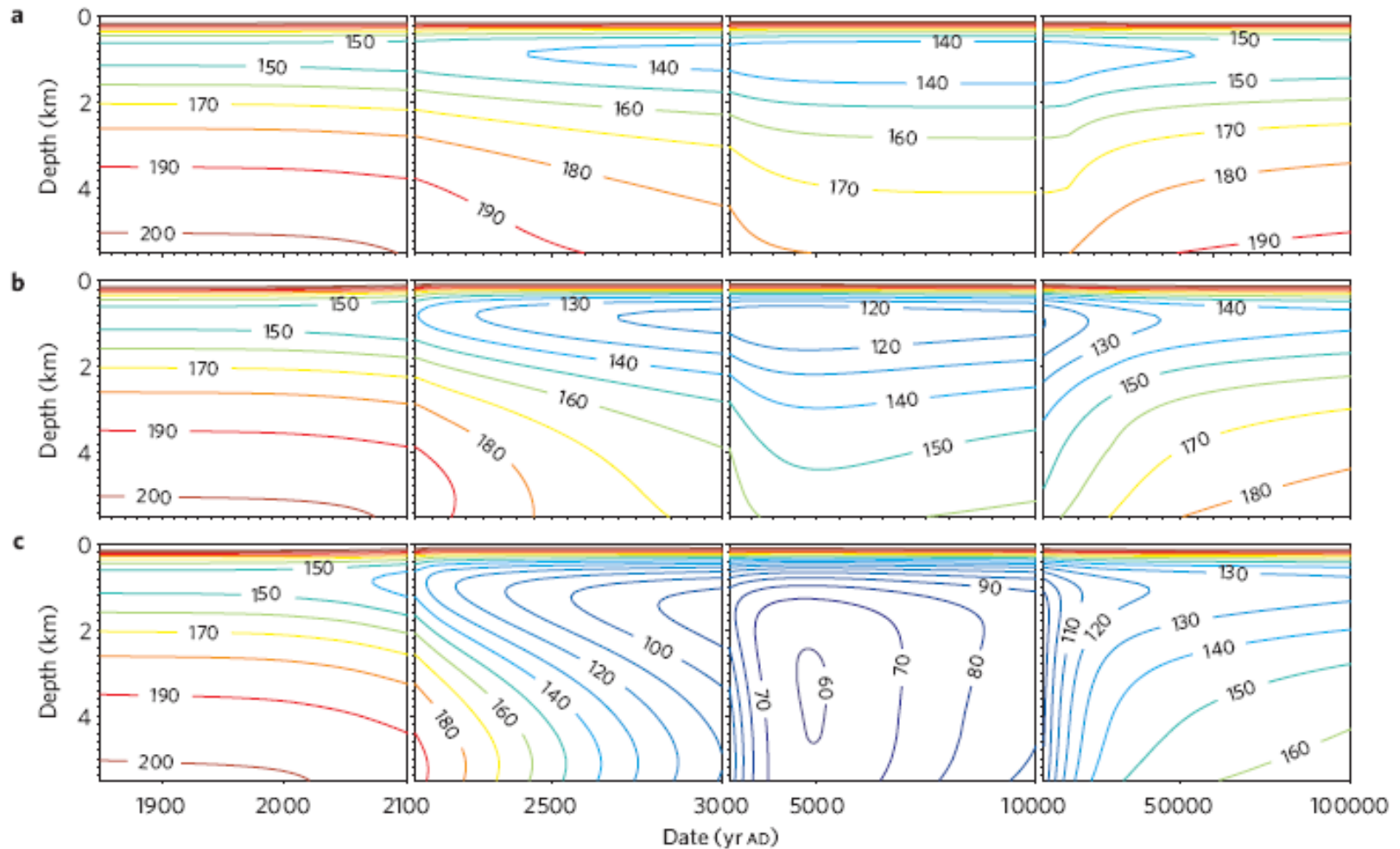
# Results (experiments)



Proc.Roy.Soc.  
2007

# Results (models)

Ocean O<sub>2</sub> content (mol kg<sup>-1</sup>)



Nature Geoscience 2009



# Conclusions (part 1)

**CO<sub>2</sub> gives warming, size unknown (2100: 1–6°C)**

**Are we on our way out of the little ice age or do we cause global warming?**

**IPCC: 10 % : 90 %**

**Al Gore: 0 % : 100 % “The evidence is overwhelming and undeniable”**

**JOPP: >>10 % : <<90 % “Comparison with past climate change”**

**Ocean acidification, size known ( $\Delta\text{pH} = -0,3 - -0,5$ ), consequences unknown, but may be larger problem than global warming**

**Not necessarily a conflict: Many “solutions” to global warming are good in themselves (reduced dependence on fossil fuel)**

**– beware of dumb solutions (damaging the economy & limiting rights to personal liberty will hurt advances in research and technology)**

# Climate problems:

- **Only one climate system**
  - **Cannot make (reproducible) experiments in the climate system**
  - **Conclusions basered on models, that cannot be falsified**
  - **Climate system extremely complex (numerous approximations)**
  - **Lack of systematic data**
  - **Politicians have become climate experts**

# Time is running out -- in 5 days!

- **UN Secretary General Ban Ki-moon** (Korea, 11 August 2009)

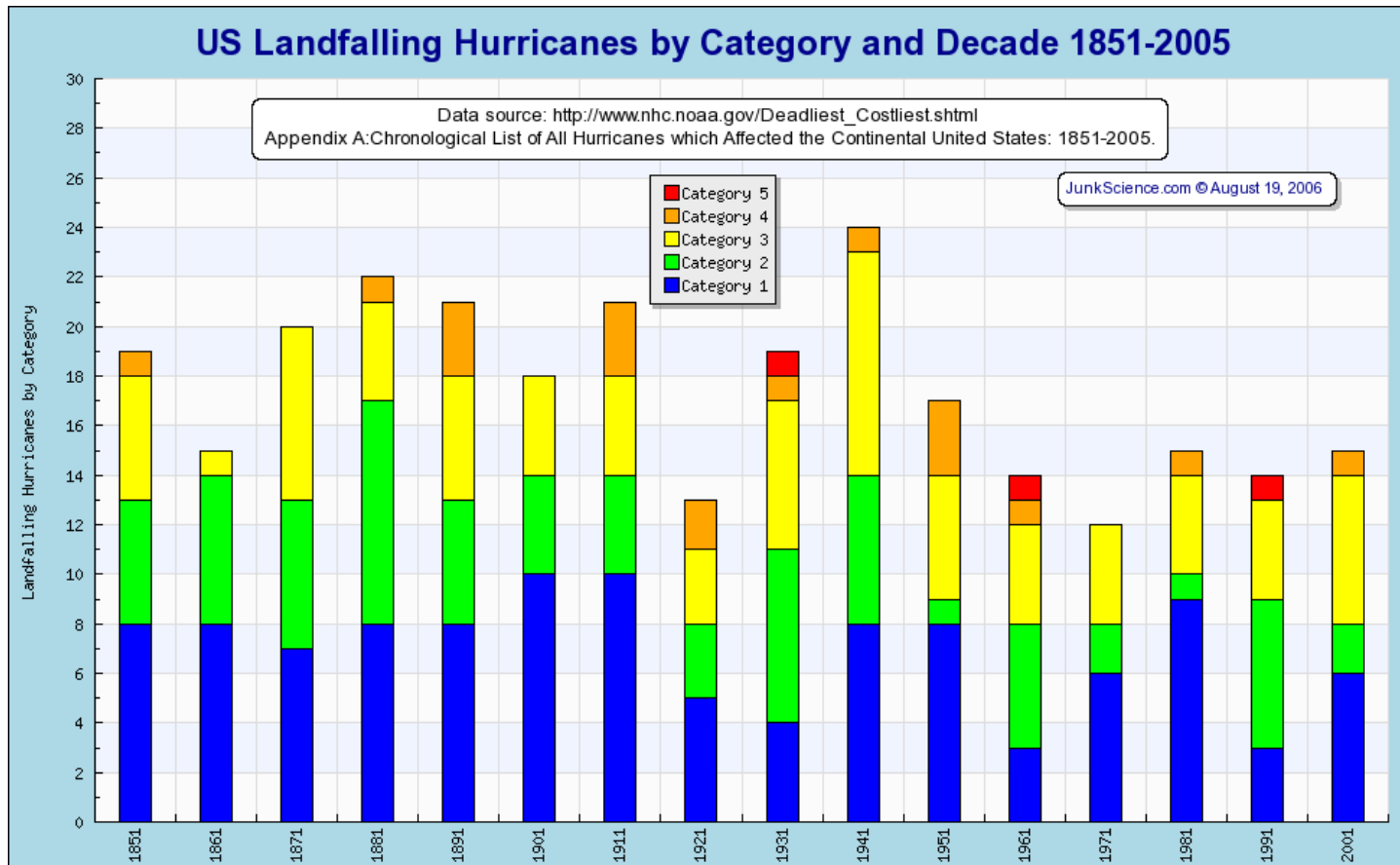
Climate change ... is the fundamental threat to humankind.

The science is clear. We know what to do and we know how to do it.

We have just four months. Four months to secure the future of our planet.

# Global warming gives:

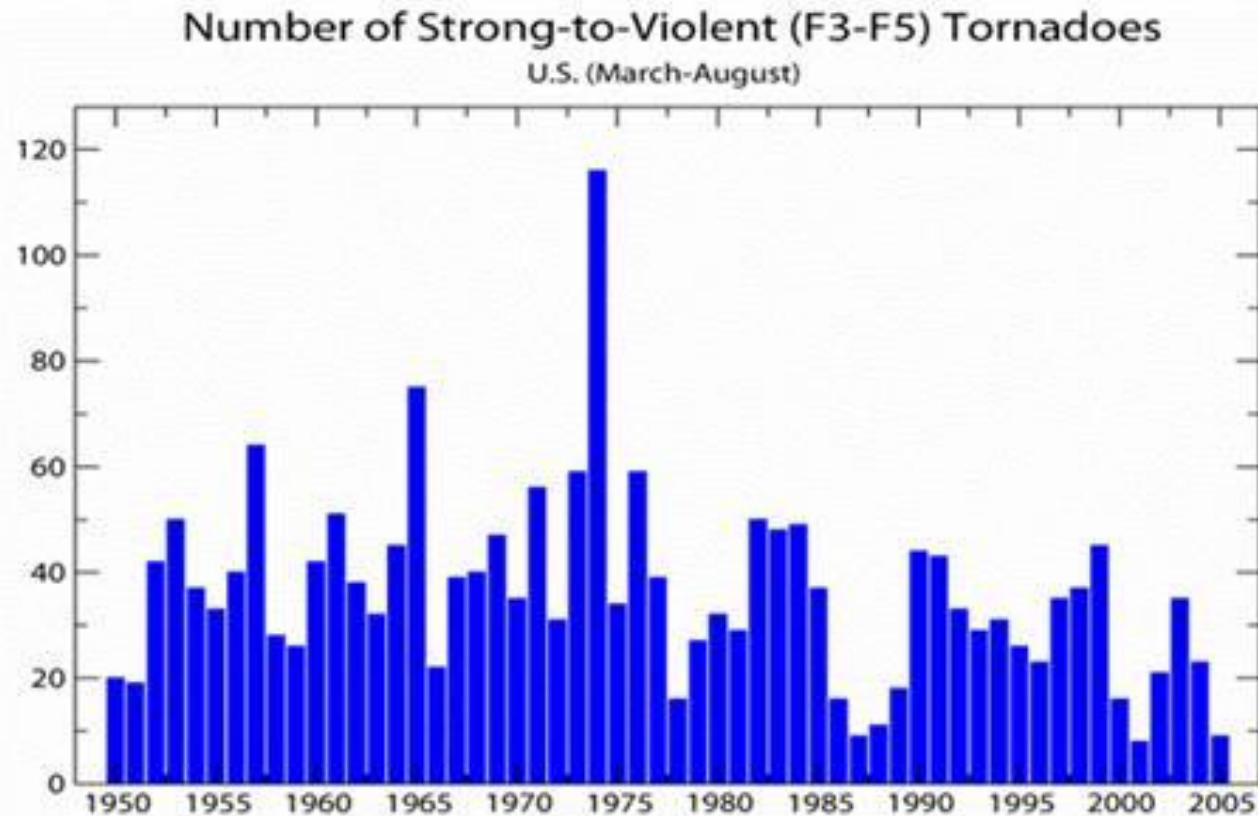
- More hurricanes





# Global warming gives:

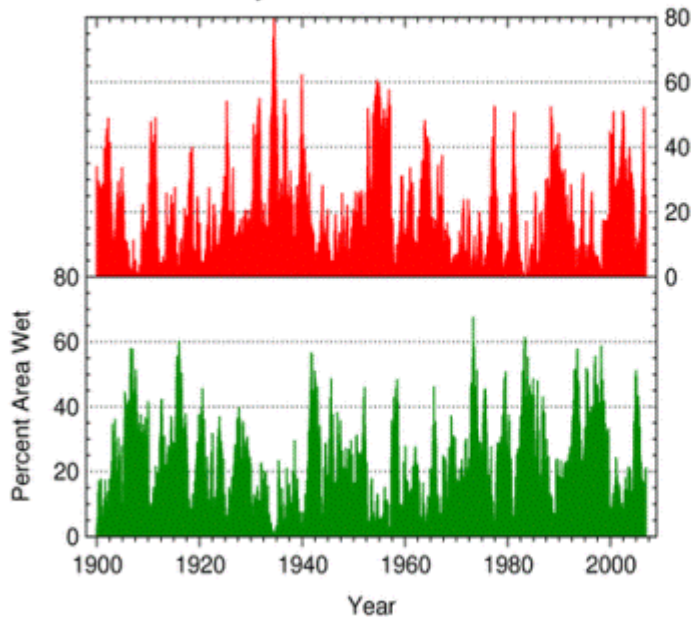
- More tornadoes:



# Global warming gives:

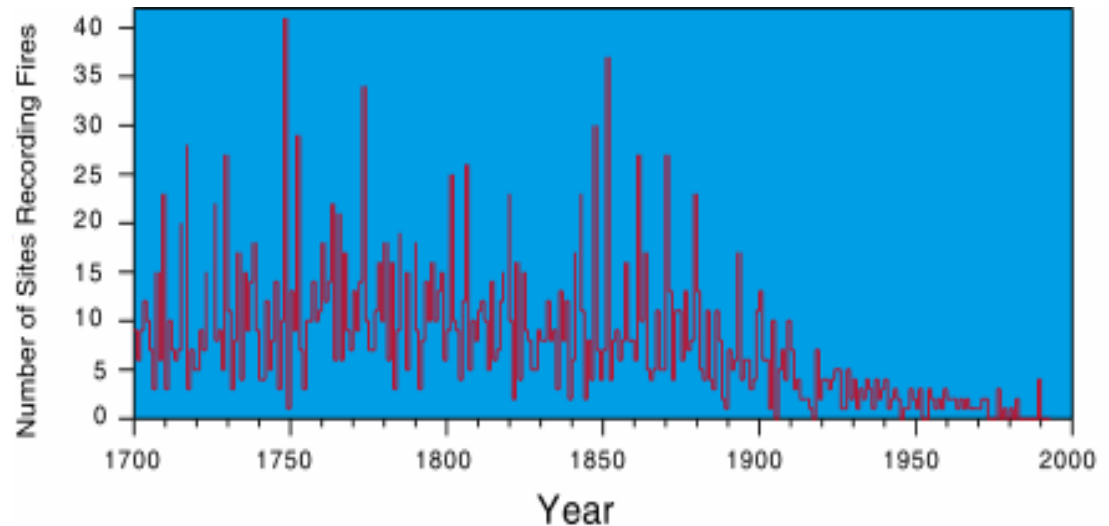
- More forest fires:

U.S. Percentage Area Wet or Dry  
January 1900 - December 2006



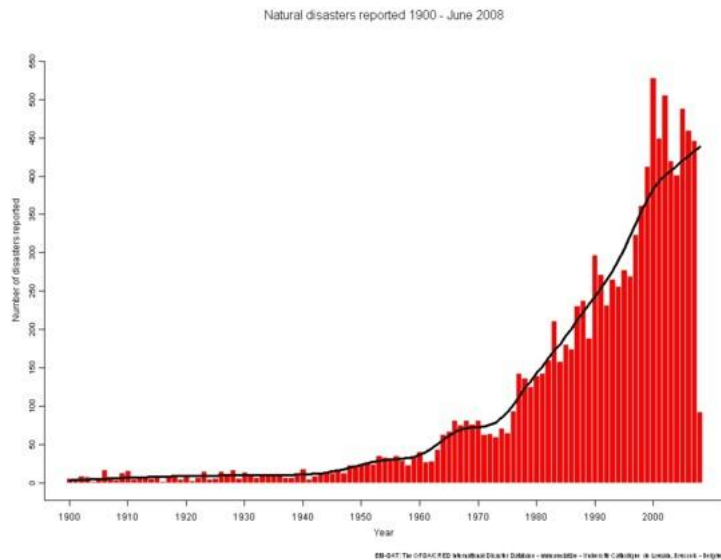
National Climatic Data Center / NESDIS / NOAA

Forest fires SW USA

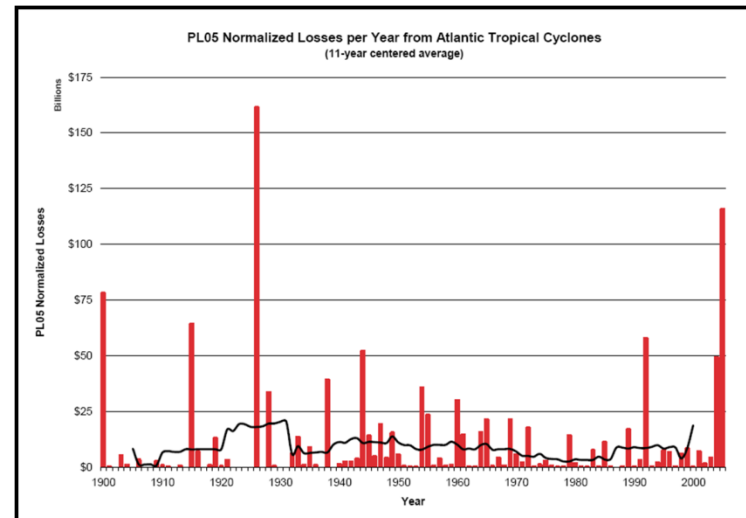


# Global warming gives:

- More disasters:



Reported natural disasters  
(1900-2007)



Economic damage from hurricanes  
(1900-2007) – adjusted for inflation and  
development along coastal regions

# Global warming gives:

Flooding in New Orleans



Melting glaciers in Greenland



Melting on Antarctica





# Conclusions (part 2)

**Many of the arguments used to prove man-made global warming are wrong**

**=> Much of what the public now knows about global warming is wrong**

**Scientific problem: A conclusion can still be correct, even if the arguments are wrong**

# Climate problems:

- **Only one climate system**
  - **Cannot make (reproducible) experiments in the climate system**
  - **Conclusions basered on models, that cannot be falsified**
  - **Climate system extremely complex (numerous approximations)**
  - **Lack of systematic data**
  - **Politicians have become climate experts**
  - **Scientists have become politicians**

# CLIMATE CHANGE

Global Risks, Challenges & Decisions

COPENHAGEN 2009  
10-12 March



**Katherine Richardson,  
University of Copenhagen,  
head of organizing  
committee:**

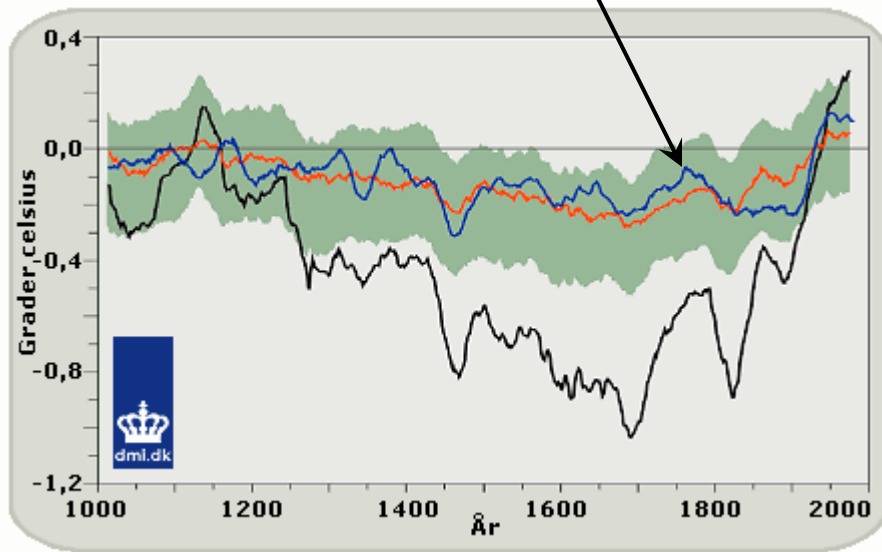
**"This is not a regular  
scientific conference.**

**This is a deliberate  
attempt to influence  
policy."**

**The Guardian, 9 February  
2009**

# A climate scandal growing for 10 years

Mann curve

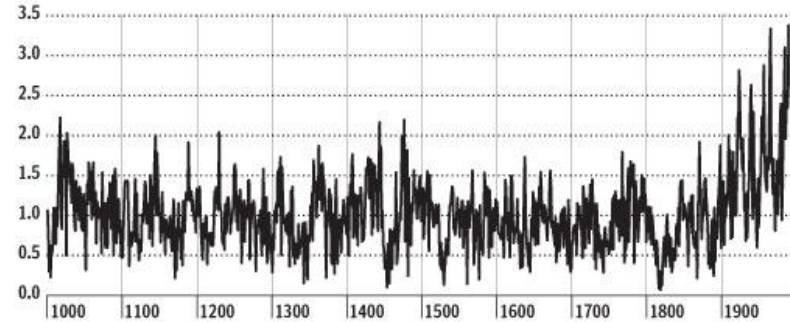


## THE RISE AND FALL OF CLIMATE DATA

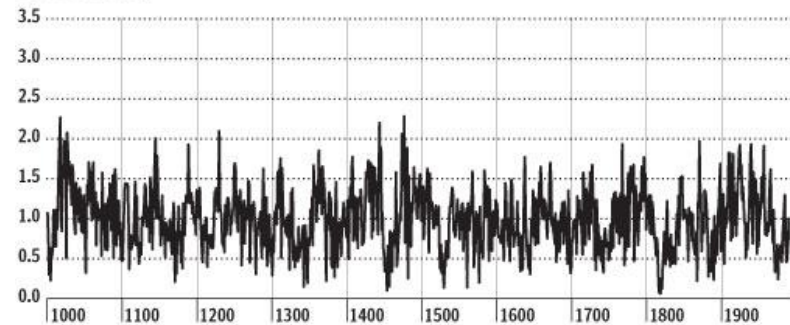


Three Yamal tree ring indexes. All are standardized to a mean of 1.0.

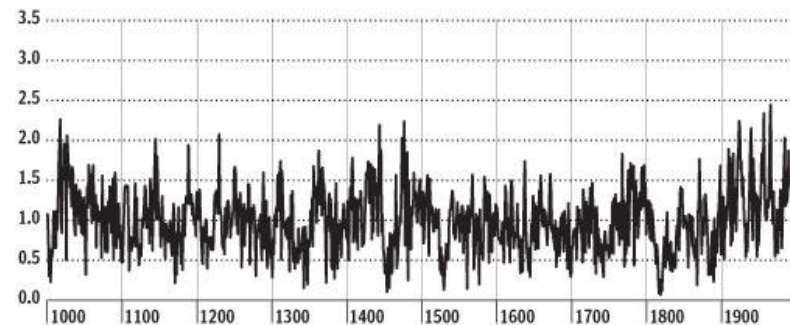
Briffa's original Yamal series using small Climactic Research Unit collection for 20th century. Widely used in hockey stick papers cited by IPCC.



Same series using larger Schweingruber tree ring collection for 20th century.



The result from using all the data.



SOURCE: STEVE MCINTYRE, CLIMATEAUDIT.ORG

JONATHAN RIVAIT / NATIONAL POST



# Climategate

**IPCC: 10 % : 90 %**

Argument in part based on reconstructions of past climate

- Leading IPCC-scientists manipulated data to deliver a more dramatic message about the human contribution to global warming,
- Destroyed data files that did not support their hypothesis,
- Prevented critics within the scientific community from having access to their raw information and methods.

**From: Tom Wigley <wigley@xxxxxxxxxx.xxx>  
To: Phil Jones <p.jones@xxxxxxxxxx.xxx>  
Subject: 1940s  
Date: Sun, 27 Sep 2009 23:25:38 -0600**

**Phil,**

**Here are some speculations on correcting SSTs to partly explain the 1940s warming blip.**

**So, if we could reduce the ocean blip by, say, 0.15 degC, then this would be significant for the global mean -- but we'd still have to explain the land blip.**

**Let me go further. If you look at NH vs SH and the aerosol effect (qualitatively or with MAGICC) then with a reduced ocean blip we get continuous warming in the SH, and a cooling in the NH -- just as one would expect with mainly NH aerosols.**

## Fall out:

- Prof. Phil Jones resigned as director of the University of East Anglia's Climatic Research Unit during investigation
- British Met Office will reexamine 160 years of temperature data (one of 3 sources of temperature data on which IPCC relies for its assessments)
- Will take 3 years, so temperature data will remain uncertain until end of 2012
- Promises to create a new and fully open method of analysing temperature data

### **Christopher Booker (The Telegraph):**

**Their importance cannot be overestimated, What we are looking at here is the small group of scientists who have for years been more influential in driving the worldwide alarm over global warming than any others, not least through the role they play at the heart of the UN's Intergovernmental Panel on Climate Change (IPCC).**

# Jan Hendrik Schön



**Condensed matter physics and  
Nanotechnology**

**2001: Production of a transistor on the molecular  
scale**

**(Authored one research paper every eight days).**

**Found to have fabricated data**

**2002-2003:**

**8 papers withdrawn in Science**

**6 papers withdrawn in Physical Review**

**7 papers withdrawn in Nature**

# Hwang Woo Suk



**Stem-cell scientist**

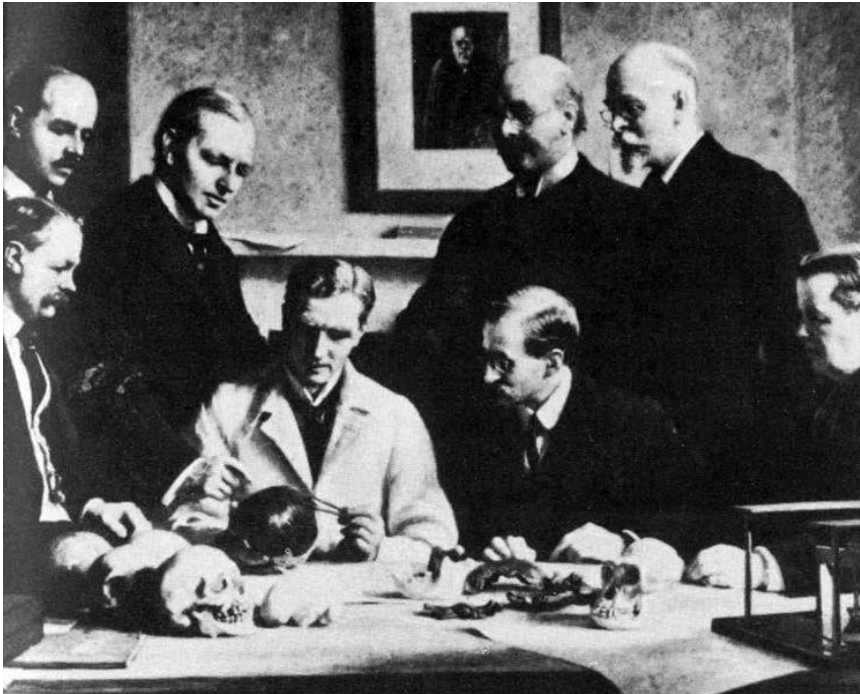
**Reported successful production of tailor-made stem cells from 11 cloned human embryos**

**Considered one of the pioneering experts in the field of stem cell**

**2005: Found to have fabricated a series of experiments.**

**2006: South Korean post offices stops selling stamps commemorating Hwangs research**

# Pitdown Man



- Fragments of skull and jawbone found 1912 in East Sussex
- Claimed to be fossilised remains of an early form of unknown man – “missing link” - between man and ape
- Many sceptics (outside UK)
- 1917: Pitdown II found
- Exposed in 1953 as a forgery, consisting of the lower jawbone of an orangutan combined with the skull of a fully developed modern human.



# Trofim Lysenko



**Director of the Soviet Lenin All-Union Institute of Agricultural Sciences  
"Invented" new agricultural technique using a variety of non-genetic techniques**

**Sovjet propaganda overstated successes and omitted failures  
Rival views rejected as 'bourgeois' or 'fascist'**



# Conclusions (part 3 = part 2)

**Many of the arguments used to prove man-made global warming are wrong**

**=> Much of what the public now knows about global warming is wrong**

**Scientific problem: A conclusion can still be correct, even if the arguments are wrong**

**Creating an organization such as the IPCC is a great disservice to science**





CO<sub>2</sub>-UDSLIP. Der hersker fortsat uenighed om klimatopmødet - selv i Venstres top.