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IEEE
Iraq Section

ICEANS-2023

CLIMATE CHANGE

The Rule in the Geological and Historical Records

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Keynote Speaker

ICEANS-2023, 25-27th of October 2023, Soran, Iraq
International Conference of Engineering, Applied and Nano Sciences

the talk: A FEW BASIC CONSIDERATIONS

1. Temperature variations are the rule in historical and geological times (few degrees to > 10° over short periods -decades);

2. CO_2 variations follow temperature variations, not the other way round;

3. Urbanization introduces a bias in temperature determination;

4. IPCC models are all overheated and do not agree with observations;

5. Climatology is a young and complex science, and is over-simplified.

NB . Unfortunately due to lack of time I will not be able to talk about the Mann's famous hockey curve/stick

IPCC, founded in 1988

The Intergouvernemental Panel on Climate Change

Very early in this process its published mandate changed, and the IPCC declared that its objective was no longer to generally investigate climate change and its causes but **to quantify the human induced effect on climate change.**
=> man-made CO2 is the main driver of global warming based on the "Anthropogenic Greenhouse Warming" hypothesis (AGW).

Consequently, if the IPCC were ever forced to concede that man-made CO2 has no effect or even only a negligible effect on global warming, then there would be no reason for the IPCC to exist. This has created a powerful incentive for IPCC scientists to continue to propagate the AGW theory.

This hypothesis of "greenhouse warming" has now been rejected on solid scientific grounds by a number of researchers …
IPCC scientists then hypothesised that portion of this absorbed radiation would be re-emitted back to the earth to supply the missing heat to Earth's surface. According to this hypothesis, after being re-absorbed by Earth's surface it would be re-emitted to the troposphere, absorbed by the same "greenhouse gases" and again returned to Earth's surface in a never-ending cycle. The hypothesis omits to provide a mechanism to terminate this apparently

RADIATIVE ‘GREENHOUSE EFFECT’ HYPOTHESIS (IPCC)

I.R. re-emission absorbed by CO_2 => **AGW**

- No experimental REALITY => only MODELS < > OBSERVATIONS
- Radiative effect is predominant: IPCC 1988 => 2023, ‘Consensus’

- Radiative effect is minor to very minor : ‘Climato-Realists’
- Radiative effect is non-existent : ‘Skeptics’ (Chemists, Physicists)

IPCC, 195 member countries
Understanding the climate system

- WHAT DOES THE IPCC SAY (AR6) in 2023 ... and since 1988
- The influence of man on the climate system is clearly established on the basis of data concerning the increase in greenhouse gas concentrations in the atmosphere;
- The principal cause is the positive radiative forcing of CO_2 ,

  => CO_2 drives/controls ==> T

AR6 :Synthesis Assessment Report
https://www.ipcc.ch/report/sixth-assessment-report-cycle/

IPCC : Anthropogenic context

- Variations linked to **natural processes** (Sun, Volcanoes, Oceanic Oscillations....) are not taken into account. Nb AR6 report: integrates volcanoes, not solar ....

- In other words, "Science is settled »

- Nb 2007, 2008, 2009 (Al Gore) => Arctic: all melted by 2013
-183 end-of-the-world announcements have already expired.
-Al Gore is a businessman, not a scientist... (+ClimateGate, 2009)

*In testimony to Congress about global warming, Al Gore 2007 declared that "**the science is settled**".*
*The fact that CO_2 heats the atmosphere absolutely is settled science. The fact that the amount of CO2 that humans have already emitted is causing warming **at an unprecedent rate** is also settled, and the longer we continue emitting CO_2 the worse it will get... http://www.thescienceisstillsettled.com*

Human influence

The IPCC reasoning is as follows :

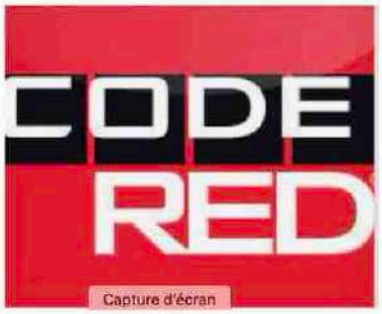
- Nature is stable; NO
- By burning fossil fuels, mankind introduces CO_2 into the atmosphere; YES
- CO_2 accumulates over tens, even hundreds or thousands of years; NO = 5-12 years

For the IPCC, the crucial of the problem
= CO_2 emissions from fossil fuels
=> AGW

Judith Curry is a Professor Emeritus and former Chair of the School of Earth and Atmospheric Sciences at the [Georgia Institute of Technology … => 2017]

The climate 'crisis':

- Its warming.
- The warming is caused by us.
- Warming is dangerous.
- We need to urgently transition to renewable energy to **stop** the warming.
- Once we do that, sea level rise will stop and the weather won't be so extreme.

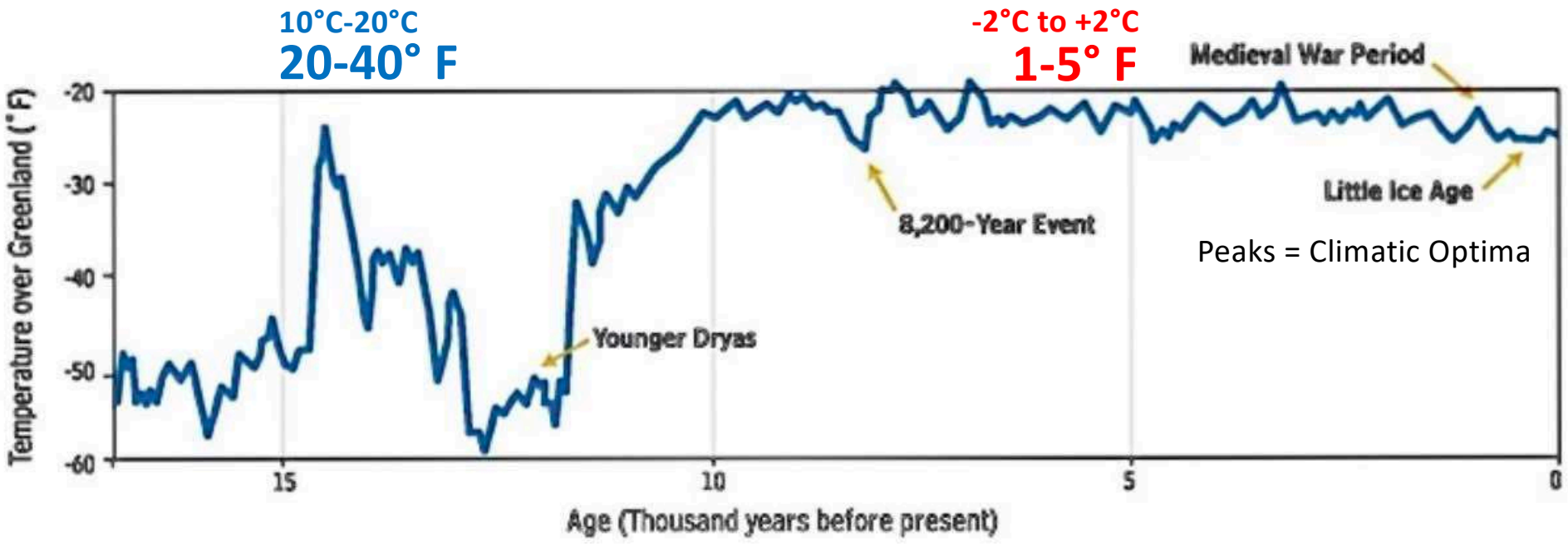


What's wrong with this narrative?

- We've vastly **oversimplified** both the problem and its solutions.
- The **complexity & uncertainty** is being kept away from the public & policy debate.
- The proposed solutions are **technologically & politically** infeasible on a global scale.
- **Overemphasizes** the role of manmade climate change in societal problems.

Judith Curry, 2021, https://judithcurry.com

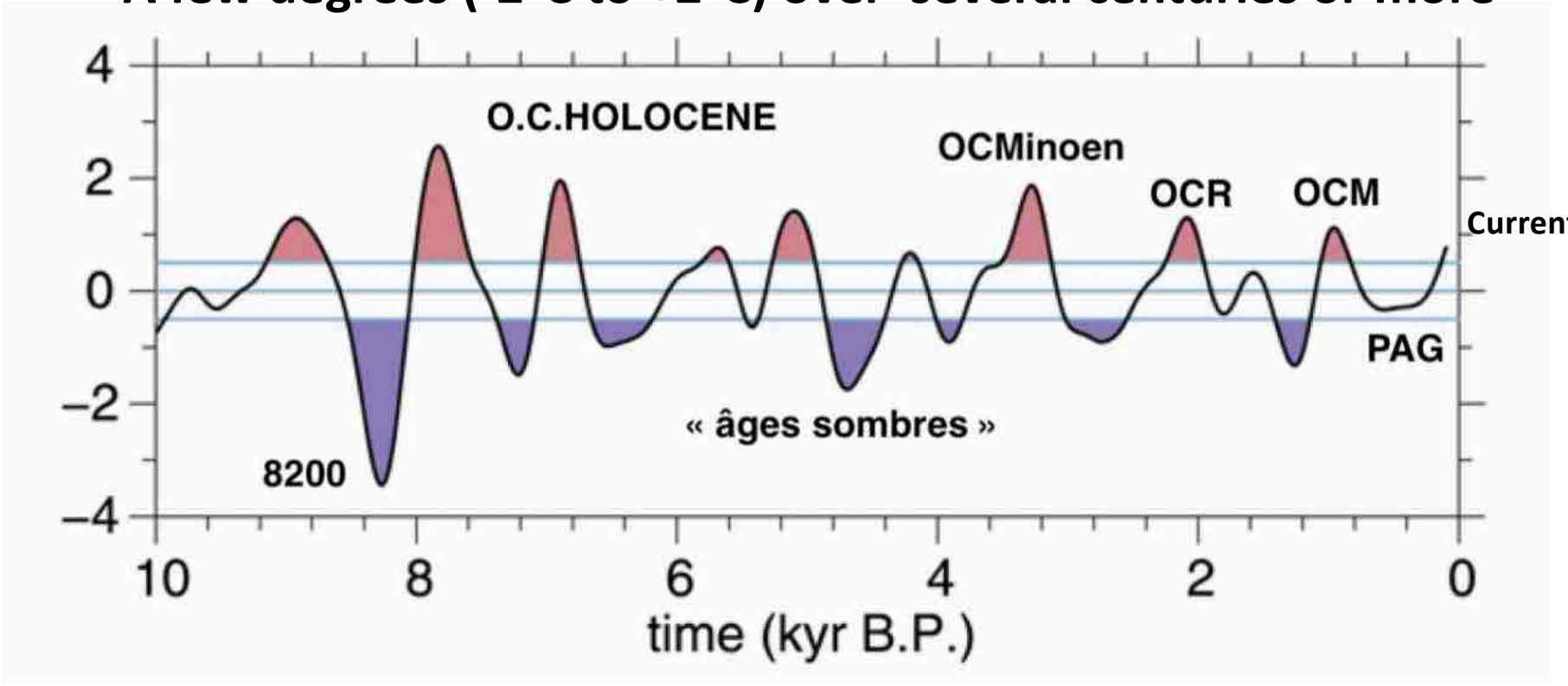
1. Temperature variations: the rule in historical and geological time (a few degrees to > 10° over short periods -decades)



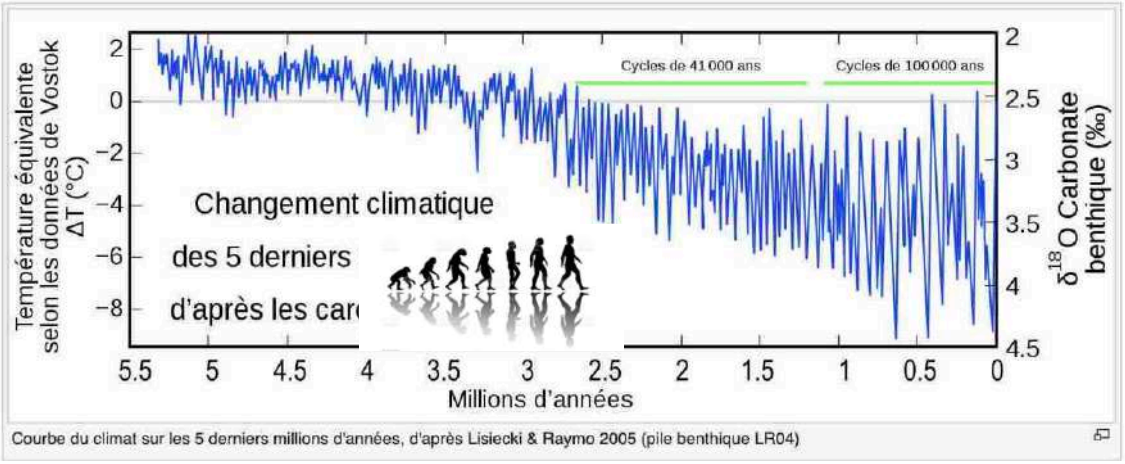
Temperature variations (°F) in Greenland in the time frame of the end of the Last Ice Age (**strong fluctuations**, left) and the Holocene (**weak fluctuations**, right).

From Schartz & Randall, 2003. Nb -60°F = -51°C and -20°F = -29°C. 'War' corresponds to 'Warming'.

A few degrees (-2°C to +2°C) over several centuries or more



Holocene temperature fluctuations (in °C, y-axis) deduced from oxygen isotope ratios in GISP2 ice in Wanner et al. 2011. OCR: Roman Climate Optimum, OCM: Medieval Climate Optimum, PAG: Little Ice Age. OC: Optimum Climate. See also Spencer, 2022.

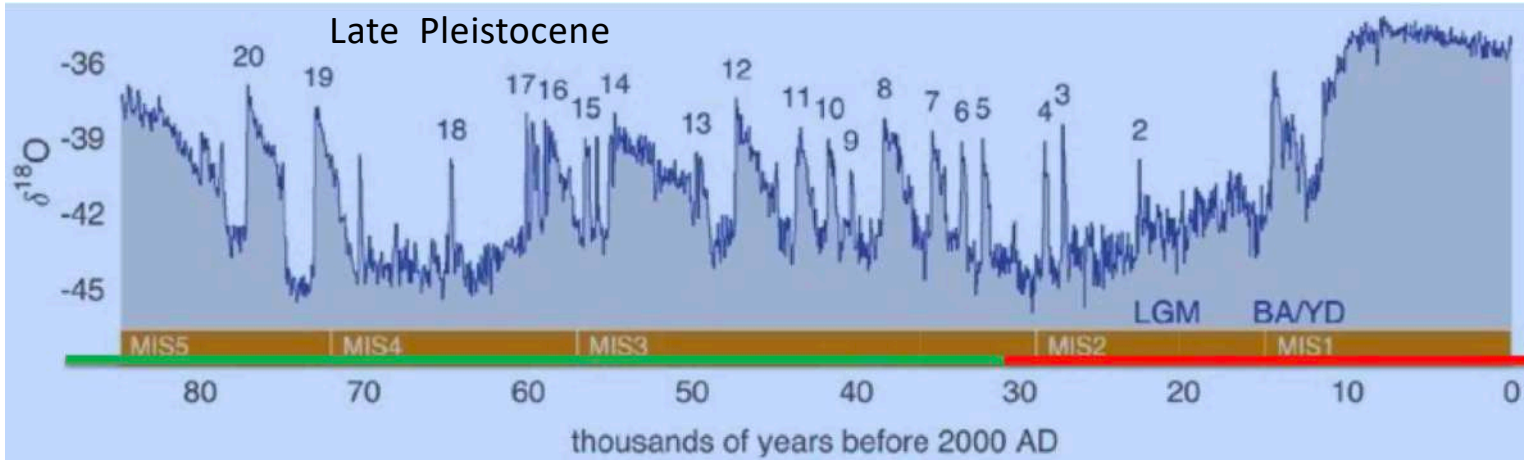


Dansgaard-Oeschger (DO) cycles : PLEISTOCENE (2,58 Ma=>Holocene)

=> > 25 cycles [500-2500yr, sometimes 4500yr]

with T increasing 20x faster than 'current T avg' increase

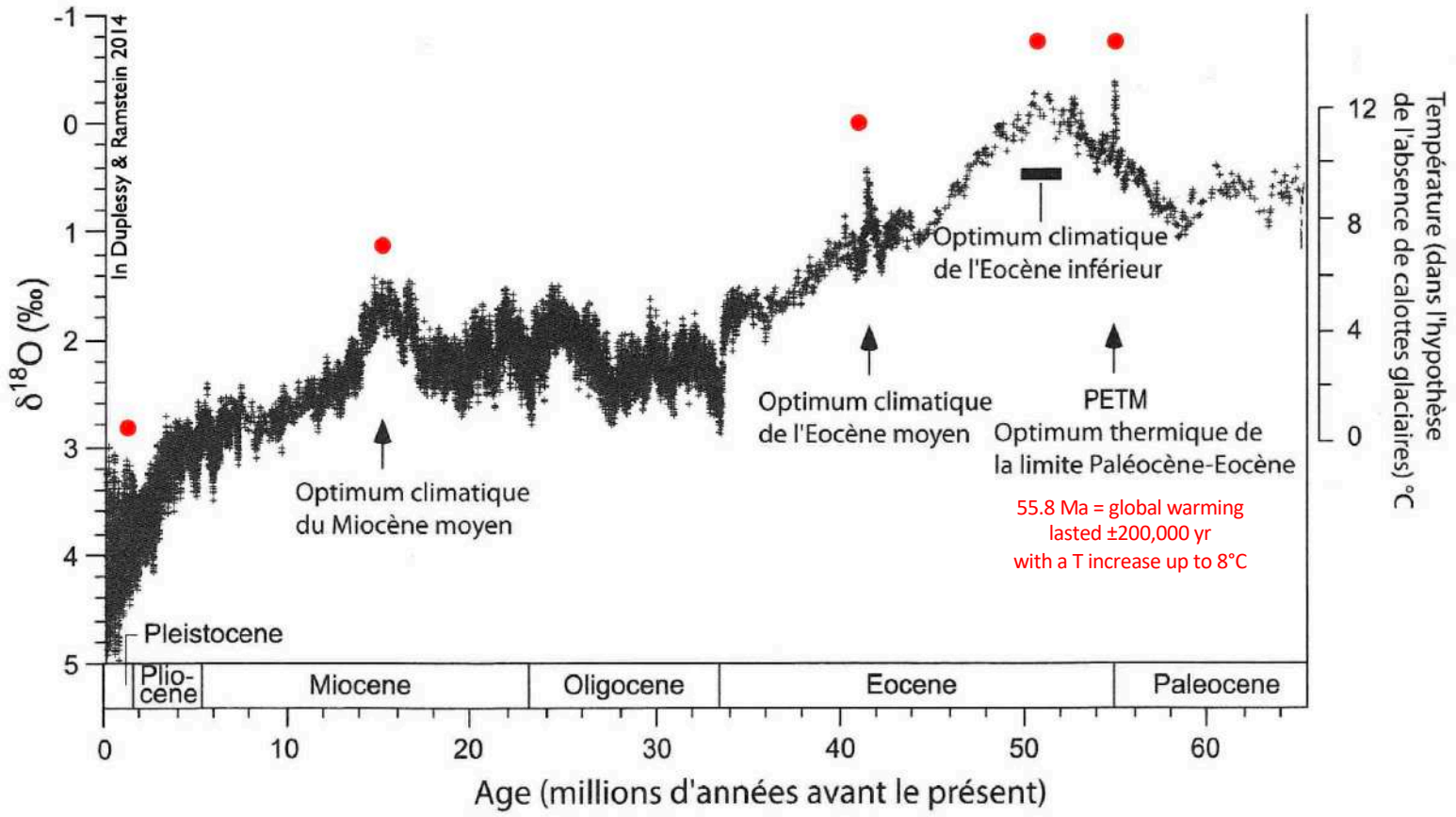
=> **Increase of 8° [to 16°C] in 40-50 years** (no CO_2 change ± 250 ppm and post-T increase)



Long Cooling of the Cenozoic (starting ~55 Ma => ice ages) with

Cenozoic Extreme Climate (Hyperthermal) States

low pole-to-equator thermal gradient; ice-free polar region, elevated CO_2 (up to 1800 ppm)



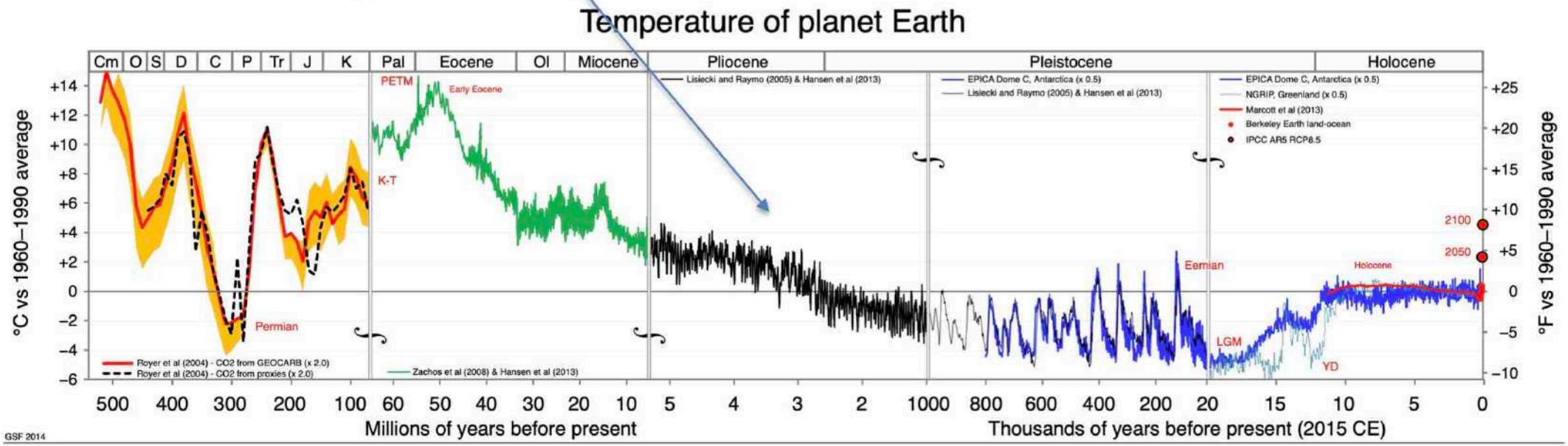
Temperature variations: the rule in historical and geological time

Δ 10-20°

T => CO_2

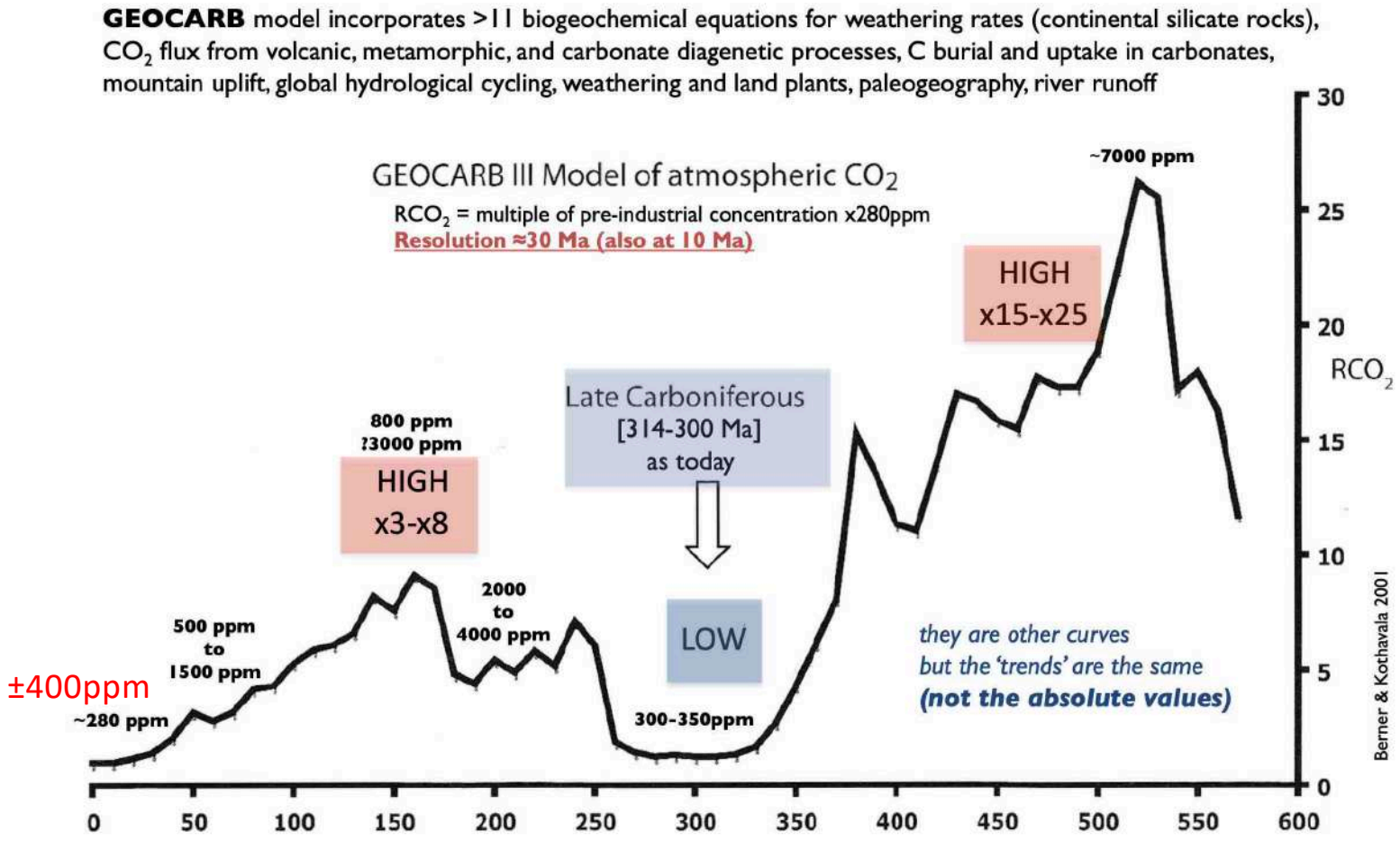
Δ 5-8°

parfois 10' années

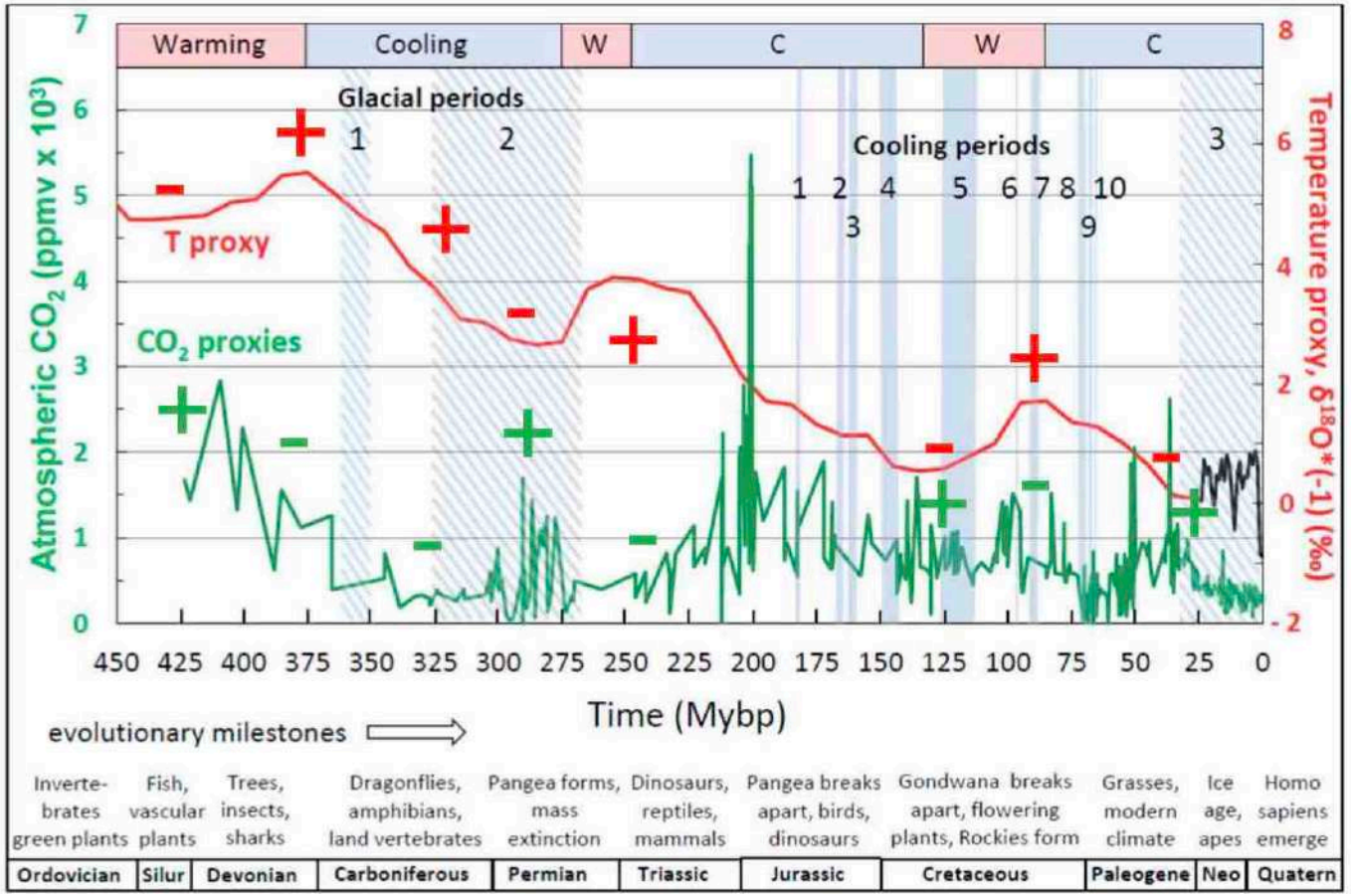


2. CO_2 variations <u>follow</u> temperature variations, not the other way round

CO_2 has always been higher than it is today for almost 98% of the Earth's history.



NO 'GLOBAL' CORRELATION BETWEEN T AND CO_2



T: 6680 analyses carbonates (18/16O)
(paleo)latitudes trop-temp-arct 20-6-1
(paleogeography, etc.)

CO_2: 831 reliable analyses: C13, B, stomata, etc.

A WARM WORLD
Moving average 3-6 My Stratigraphic resolution: 0.5-4Ma, up to 59Ky (recent series)

RESULTS
- 8-9° decrease in the Phanerozoic

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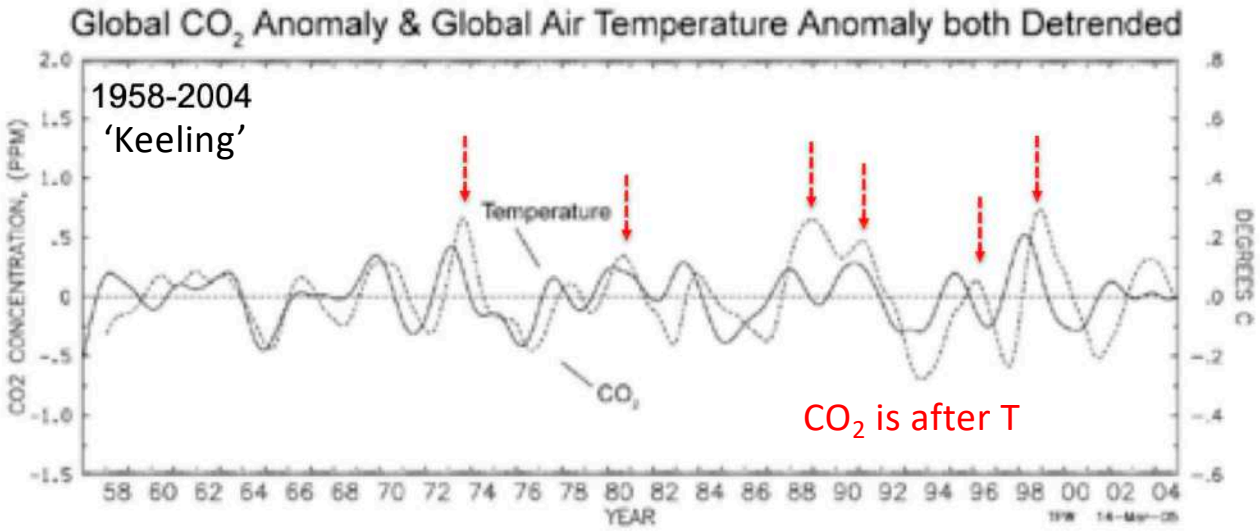


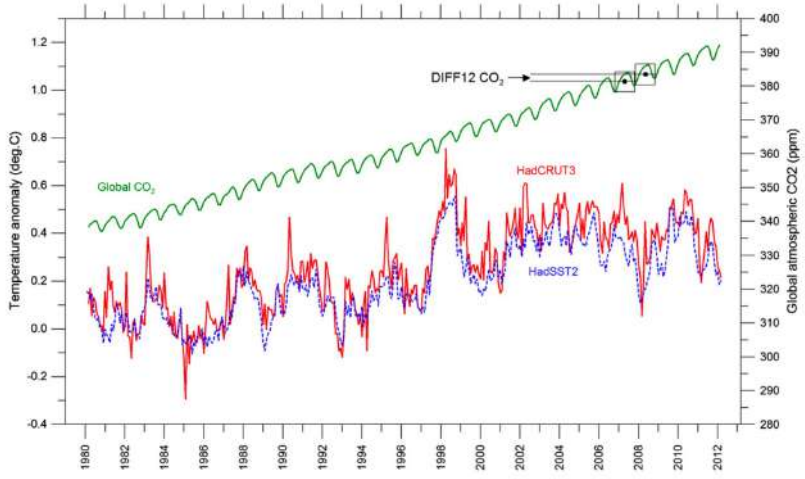


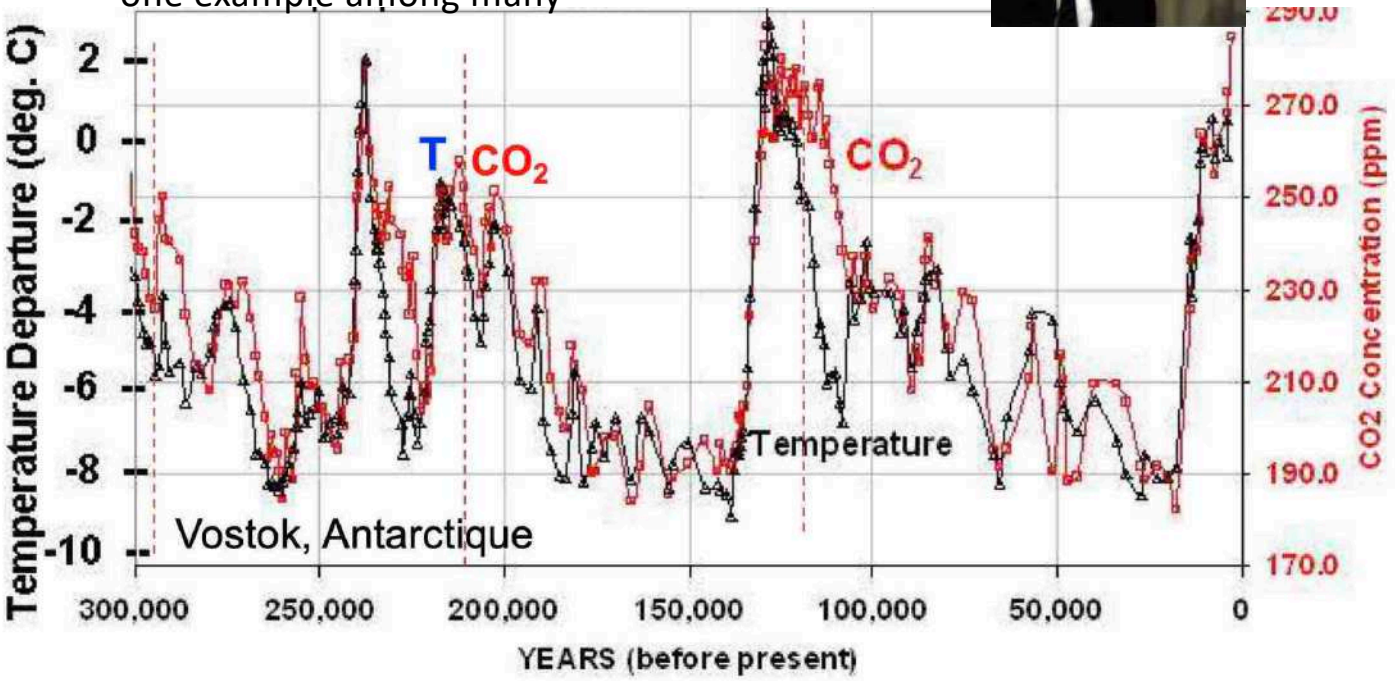
Fig. 1. Monthly global atmospheric CO_2 (NOOA; green), monthly global sea surface temperature (HadSST2; blue stippled) and monthly global surface air temperature (HadCRUT3; red), since January 1980. Last month shown is December 2011. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of the article.)

CO_2 increases continuously a
and
T fluctutates independently

CO_2 : driving force or effect?

(Henry's Law, degassing, partial pressure)

one example among many



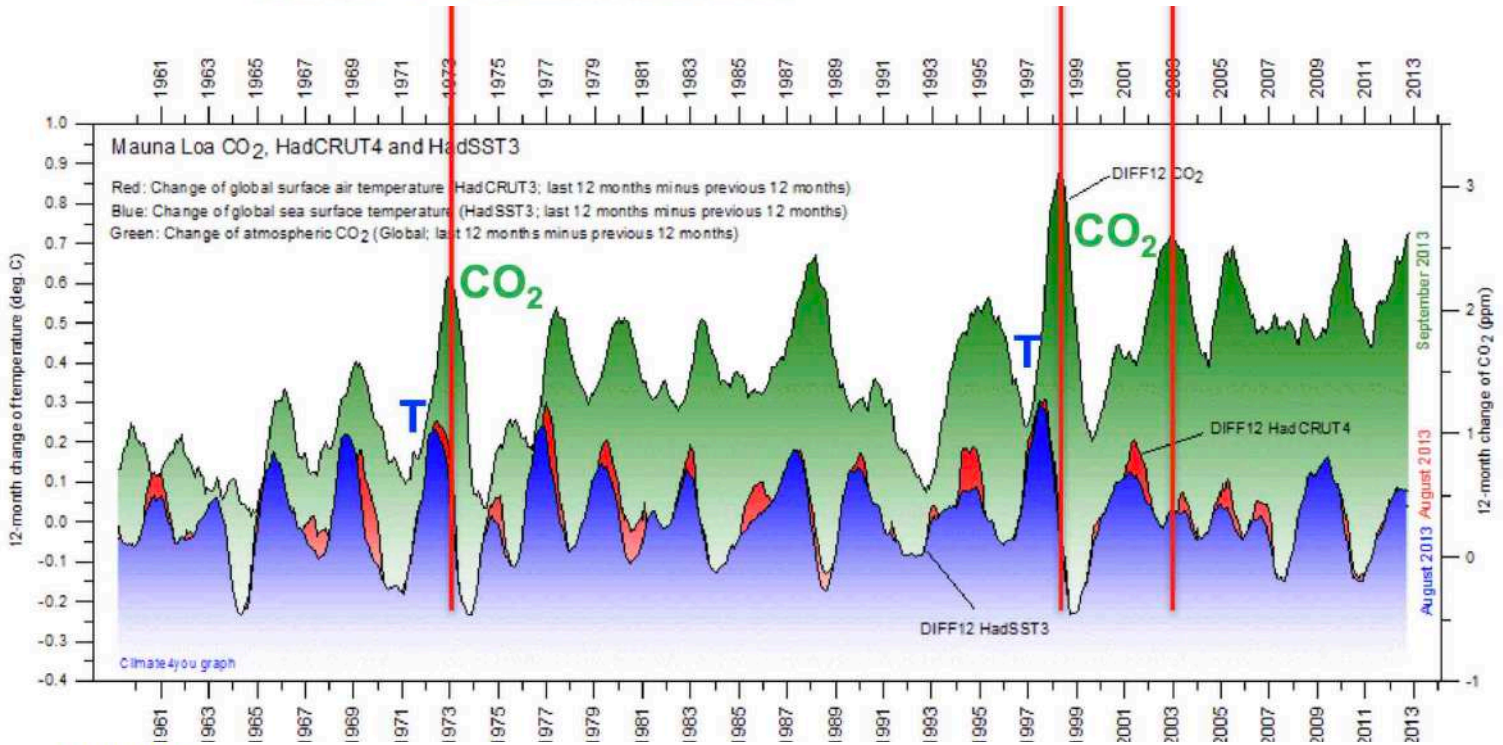
Principal Research Scientist at the University of Alabama in Huntsville, and the U.S. Science Team leader for the Advanced Microwave Scanning Radiometer (AMSR-E) on NASA's Aqua satellite.

http://www.drroyspencer.com/2009/06/ ice-ages-or-20th-century-warming-it-all-comes-down-to-causation

Global and Planetary Change
Volume 100, January 2013, Pages 51–69

The phase relation between atmospheric carbon dioxide and global temperature

Ole Humlum[a, b], Kjell Stordahl[c], Jan-Erik Solheim[d]



LAG TIMES
9 MONTHS

Highlights

▸ Changes in global atmospheric CO_2 are lagging 11–12 months behind changes in global sea surface temperature. ▸ Changes in global atmospheric CO_2 are lagging 9.5–10 months behind changes in global air surface temperature. ▸ Changes in global atmospheric CO_2 are lagging about 9 months behind changes in global lower troposphere temperature. ▸ Changes in ocean temperatures explain a substantial part of the observed changes in atmospheric CO_2 since January 1980

THE T/CO_2 PHASE SHIFTS (= LAG TIMES) IN DIFFERENT ARTICLES, WITH POORER TEMPORAL RESOLUTIONS

- Neftel et al. 1988 (Nature) **phase shift** of 700 ± 500 years.
- Fischer et al. 1999 (Science)): **phase shift** of 600 ± 400 years.
- Monnin et al. 2001 (Science): **phase shift** of 800 ± 600 years
- Callion et al. 2003 (Nature): **phase shift** of 800 ± 200 years

'**We see that it is probably the increase in ocean temperature that is causing the multi-year increase in atmospheric CO_2 concentration, and not the other way around.** Unfortunately the media and the IPCC claim that it is the CO_2 released by man (therefore only 10 GtC/year compared to the 200 GCt/year released by nature) which causes the increase in the temperature of the atmosphere... and this despite the evidence of observations and numerical data!'.

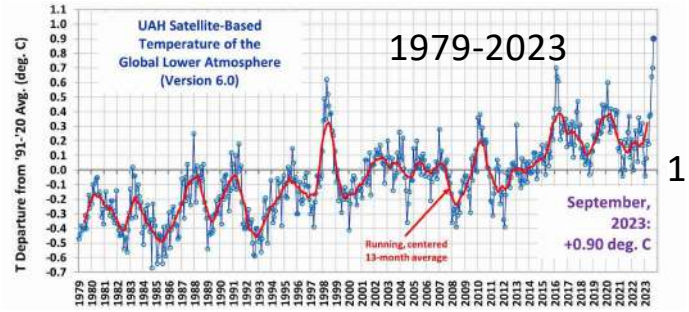
Henry's Law (1803!)

As T increases, the solubility (CO_2) in water decreases.

Why are there so many climate alarmism today?

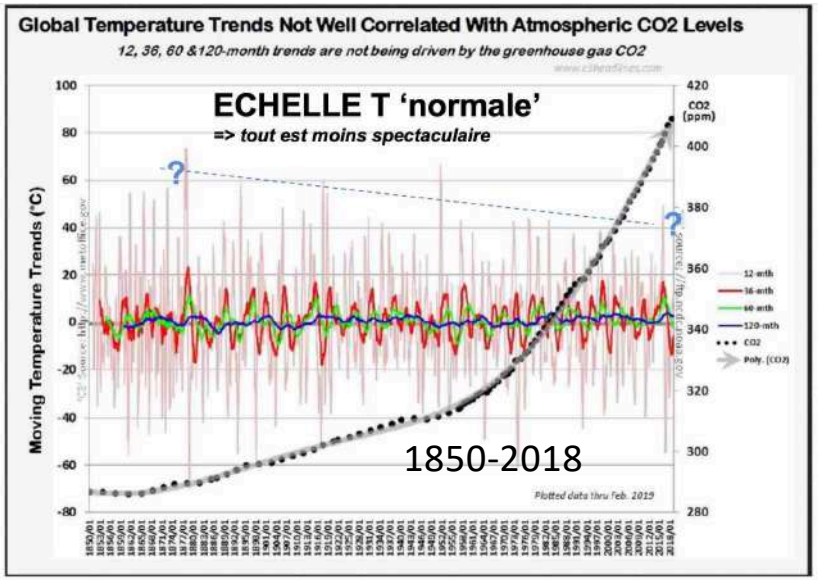
One explanation is the representation of the increase in T.

We live with T variations of several degrees or more per day, not tenths of a degree (spectacular scale).



1.0°

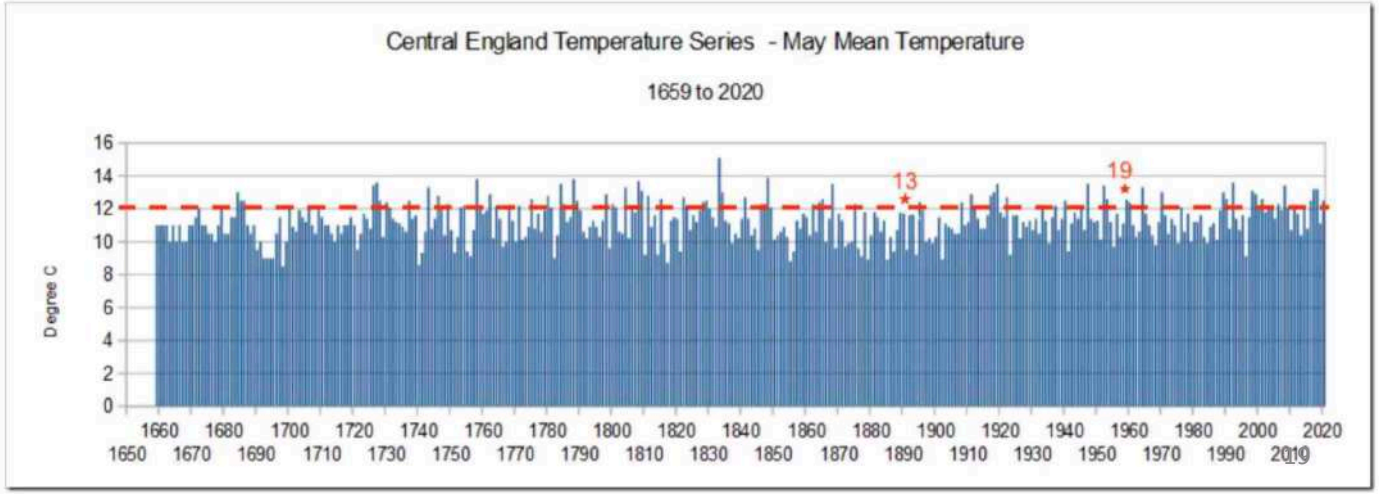
With a normal 'human' scale, everything is less spectacular



Janvier 1850 – Février 2019

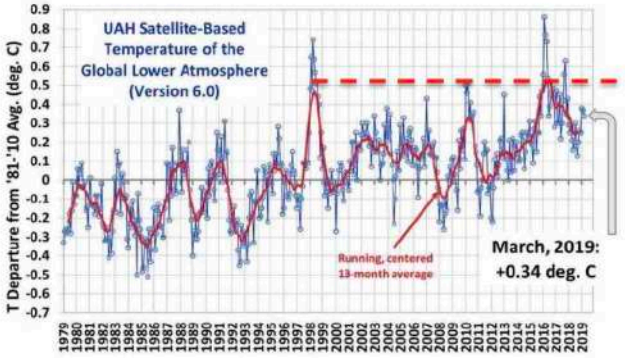
Global Temperature with 12-month, 36-month, 60-month and 120-month moving averages, and CO2.

With a normal ''human' scale, everything is less spectacular

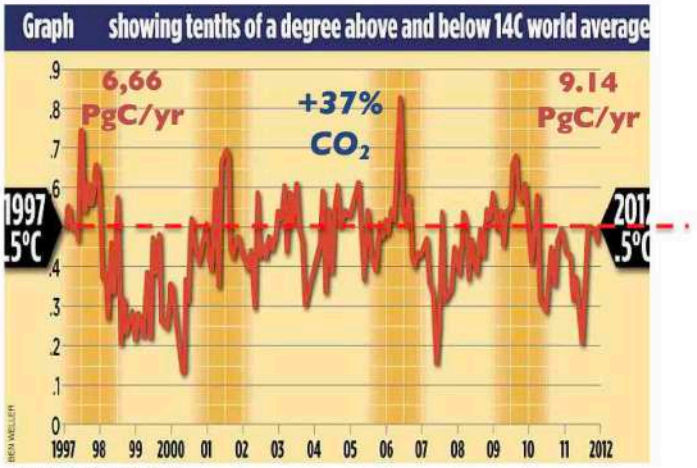


‘Spectacular scale’
Not human one

“Température moyenne globale”
entre guillemets



PAUSE – PLATEAU

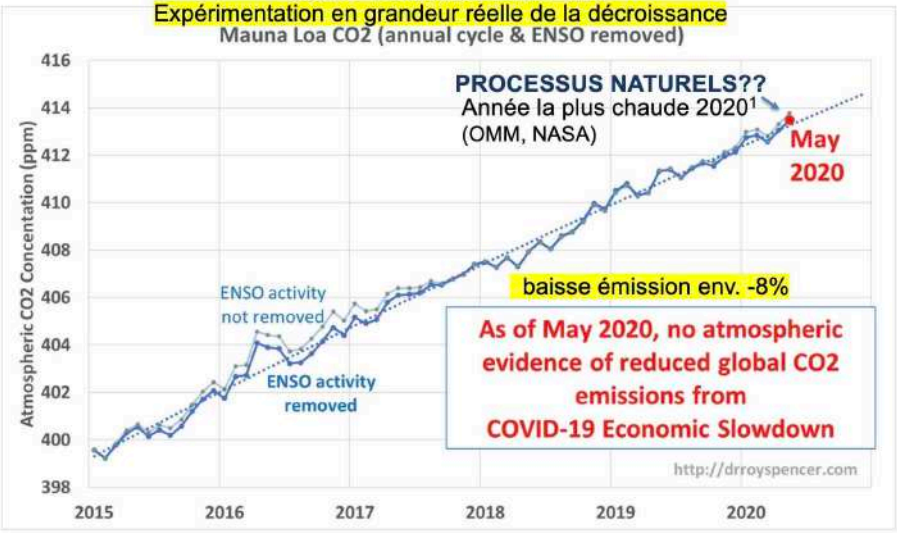


D. Rose, Mail, UK 2012

+https://wattsupwiththat.com/2019/04/09/2019-enso-forecast/

COVID-19 MARS/AVRIL 2020

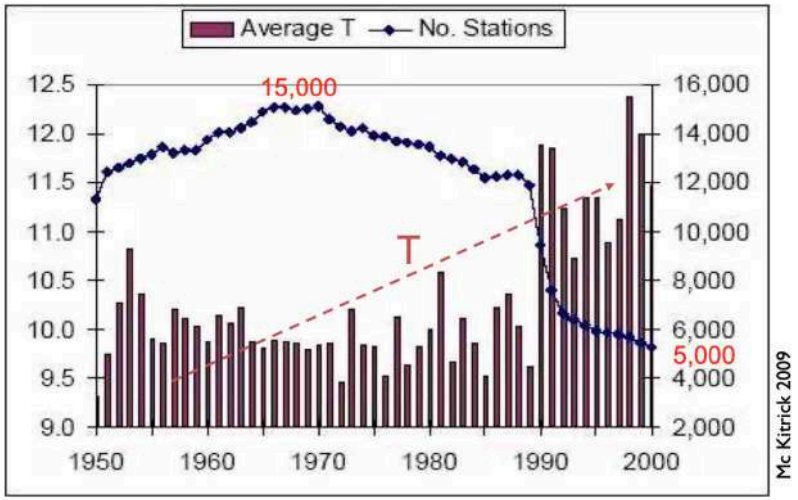
Expérimentation en grandeur réelle de la décroissance



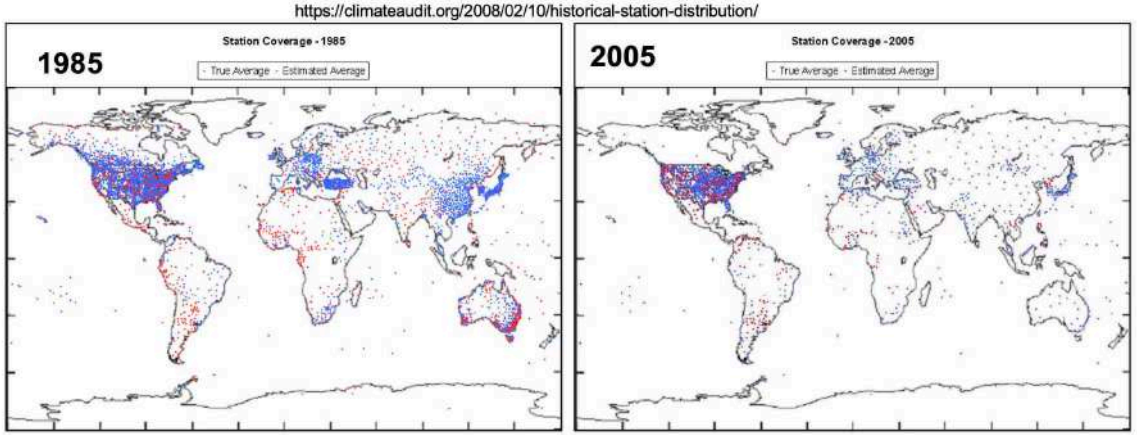
[1] https://meteofrance.com/actualites-et-dossiers/actualites/climat/2020-une-des-trois-annees-les-plus-chaudes-selon-lomm
https://www.drroyspencer.com/wp-content/uploads/MLO-CO2-data-through-May-2020-ann-cyc-removed.jpg
https://www.climato-realistes.fr/co2-atmospherique-mai-2020-non-affecte-par-le-ralentissement-economique-mondial-covid-19/

14

3. Urbanization introduces a bias in temperature determination



https://climateaudit.org/2008/02/10/historical-station-distribution/



A decline in quality seems to be apparent in 1985, as many more stations show as red, indicating their averages are **estimated** due to missing monthly data.

A huge drop in stations is visible in the 2005 plot, notably Australia, China, and Canada. 2005 was the **warmest year** in over a century. Not surprising, as the Earth hadn't seen station coverage like that in over a century.

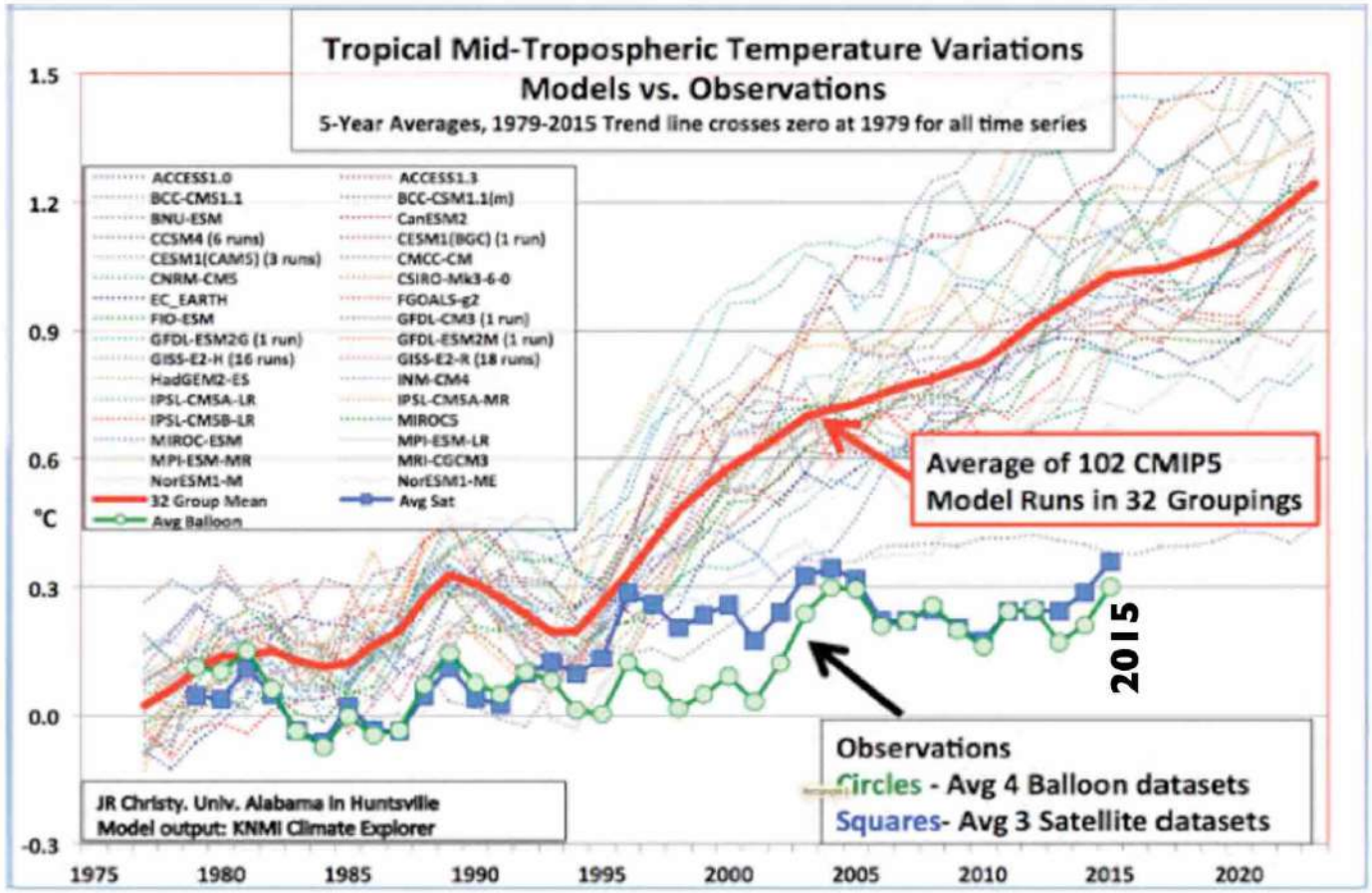
2009
ONLY 10% of the 1067 US weather stations
are conform with the 'CNR1-2' US quality standards
…

2018
Urbanization has increased minimum T 1,7K in the UK
….

China etc.

4. IPCC models are all overheated and do not agree with observations

The climate **models** have failed to get global warming right. As the IPCC has confirmed, for the period since 1998, "111 of the 114 available climate-model simulations show a surface warming trend larger than the observations". [IPCC Synthesis report 2014, p 43]



That is to say there is a consensus that the models are exaggerating the rate of global warming.

5. Climatology is a young and complex science, and is over-simplified

Natural cycles operate over highly variable timescales, well beyond the successive 30-year segments (1930-1960, 1960-1990, etc.) that the WMO (WMO, 2021) considers to be the reference period for characterizing the Earth's climate! Geology (paleontology, sea level ….) and climatology (including astronomy) **are characterized by overlapping cycles of several hundreds and thousands of years. Most of these cycles (of which there are at least twenty) are not yet fully understood and include evidence of temporal instability (chaos). They are linked to oceanography, the Sun, the Planets, gravity, volcanism, plate tectonics and so on.**

It took over 50 years to validate the theory of plate tectonics, which was equally complex, did not foster fear, did not attract money, and did not occupy the media and many politicians daily.

Origins of climate changes

by Prof. Alain Préat, emeritus, Université Libre de Bruxelles
13 octobre 2023

An obvious fact

No one denies that the Earth's temperature has been rising slightly by around 0.9°C for almost 125 years (see Soon et al., 2023 for details). This recent increase is minimal (0.6°C between 1975 and 1998) and framed by periods of temperature decrease of similar amplitude (1880-1910 and 1940-1975).

Our media, including the IPCC and many scientists, claim that the sole culprit for the current temperature rise is atmospheric CO_2 levels, which are linked to human activity. This is a hypothesis, since no link has yet been established between temperature and CO_2 content – quite the contrary (Davison, 2023). The climate alarmism (Watts, 2023) that occupies the front pages of our newspapers is not justified, as we shall see.

https://www.science-climat-energie.be/origins-of-climate-changes/

conclusion : A FEW BASIC CONSIDERATIONS

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Thanks for your attention