How and Why ist Earth´s Climate Changing

H. J. Luedecke, C. O. Weiss

1)

More than 2500 investigations have been published in the scientific literature, which show, on the basis of measurements, that the influence of CO2 on Earth's climate is unimportant.

As opposed, ZERO works exist, which would show, on the basis of measurements, a substantial influence of CO2 on climate.

2)

The official propaganda claims that only a small amount of CO2 could be emitted before a 2 degree warming occurs.

This is complete nonsense. In every reservoir with inflow and outflow an equilibrium occurs, at which the filling level of the reservoir is determined by the INFLOW RATE (amount of inflow per unit time), not the inflow amount.

Thus we can emit CO2 as long as we want, at constant rate, and the concentration of CO2 in the atmosphere will not change at all.

3)

The official propaganda claims that „extreme wheather events" which cause dammage, increase with warming.

The contrary is correct: The wheather becomes more quiet with warming (extreme wheather events increase with cooling. Example: Storms increase in autumn). This is due to the different water vapour contents of the atmosphere in the tropics and in the arctics. T

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LETTER

Harmonic Analysis of Worldwide Temperature Proxies for 2000 Years

Horst-Joachim Lüdecke[1,*] and Carl-Otto Weiss[2]

[1]HTW, University of Applied Sciences, Saarbrücken, Germany
[2]CINVESTAV, Querétaro, Mexico; visiting from PTB Braunschweig, Mexico, Germany

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Abstract: The Sun as climate driver is repeatedly discussed in the literature but proofs are often weak. In order to elucidate the solar influence, we have used a large number of temperature proxies worldwide to construct a global temperature mean G7 over the last 2000 years. The Fourier spectrum of G7 shows the strongest components as ~1000-, ~460-, and ~190 - year periods whereas other cycles of the individual proxies are considerably weaker. The G7 temperature extrema coincide with the Roman, medieval, and present optima as well as the well-known minimum of AD 1450 during the Little Ice Age. We have constructed by reverse Fourier transform a representation of G7 using only these three sine functions, which shows a remarkable Pearson correlation of 0.84 with the 31-year running average of G7. The three cycles are also found dominant in the production rates of the solar-induced cosmogenic nuclides ^{14}C and ^{10}Be, most strongly in the ~190 - year period being known as the De Vries/Suess cycle. By wavelet analysis, a new proof has been provided that at least the ~190-year climate cycle has a solar origin.

Keywords: Worldwide temperature proxies, Solar-climate cycles, Solar origin of the ~190 year climate cycle with new accuracy.

INTRODUCTION / OVERVIEW

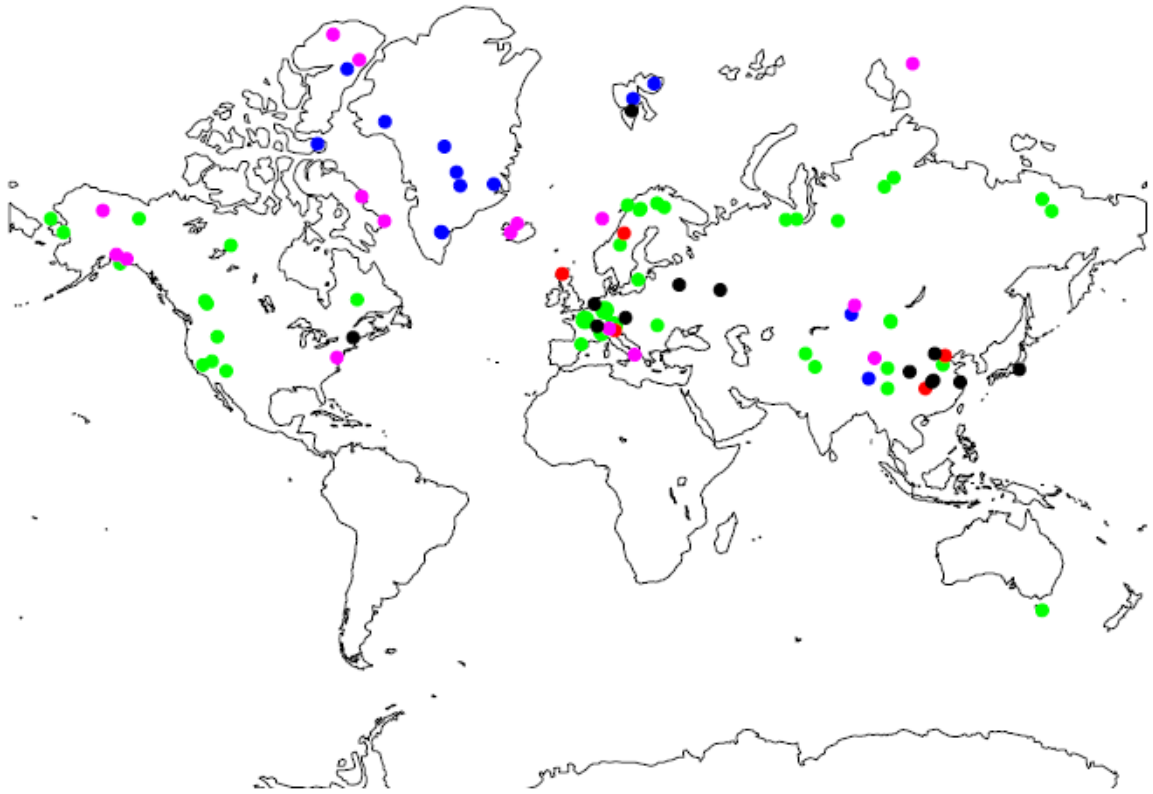
Periodic or cyclic behaviour is so common in nature and physics that it gives the analysis technique of Fourier transform its outstanding importance. The reason for the abundance of cycles lies in the property of the transition from static to dynamic behaviour. This "modulational instability" occurs in space and time when the energy input into a dissipative system is increased beyond the range of static stability [1]. It leads overwhelmingly to a periodic state (rare exceptions exist, *e.g.* the Lorenz model, where the onset of dynamics is chaotic). The Sun and the Earth are classic dissipative systems with energy input. Cyclic dynamics is therefore to be expected. Cycles with periods ranging from several years to more than 100,000 years [2] have accordingly been observed, *e.g.* in paleoclimate studies.

The physical mechanism of climate cycles is mostly unknown and is not the main subject of this study. Autogeneous mechanisms and indirect solar forcing caused by the varying magnetic field of the Sun are discussed [3, 4, 5, 6]. Scafetta [7] provides evidence for the influence of planetary tides on the Sun, modulating the Sun's activity, cosmic ray flux and cloud formation by statistical correlation, and briefly discusses the assumed physical mechanism.

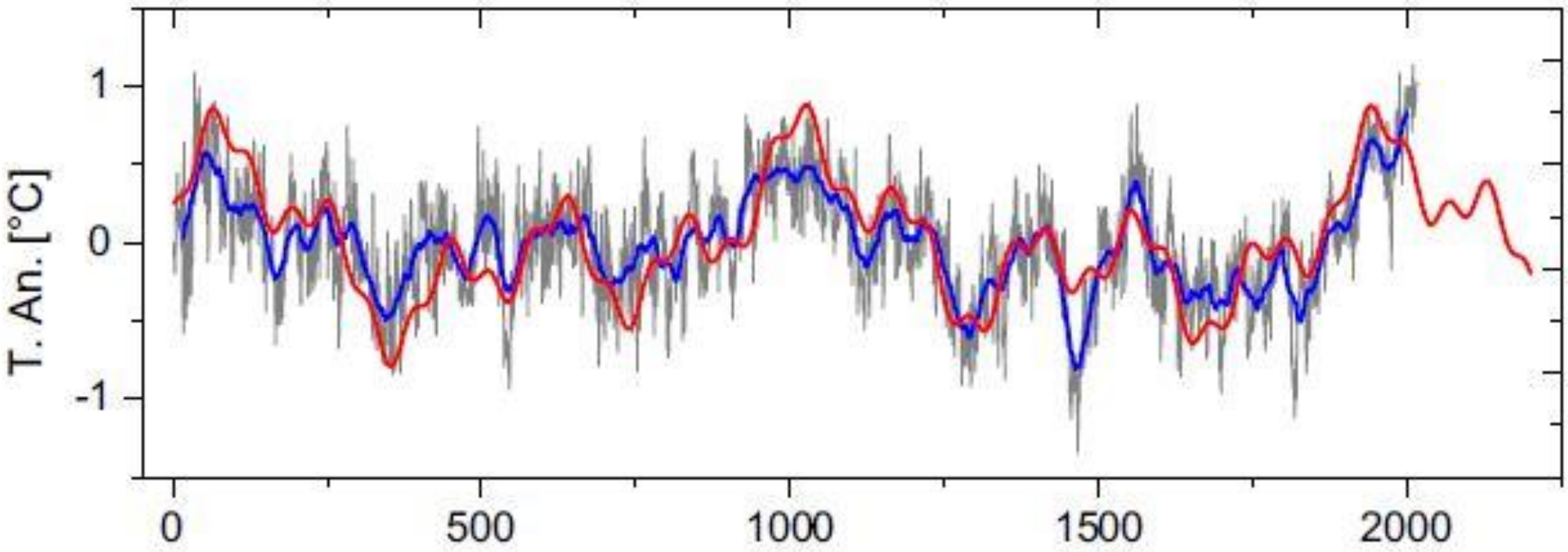
Concerning statistical correlation, Bond *et al.* [8] found an apparently solar-related 1500 year cycle. Liu *et al.* [9] found cycles of 1324, 800, 199, 110 years from tree rings in the Tibetan plateau. Kern *et al.* [10] reported on a late Miocene lake system indicating periods of 80, 120, 208, 500, 1000, and 1500 years. Zhao and Feng [11] found periods of 208, 321, and ~1000 years from Antarctic ice cores. Knudsen *et al.* [12, 13] observed correlation of the ~200 year De Vries/Suess cycle in spectrograms of solar activity with that of temperature variations in caves of China, Turkey, and the USA. Steinhilber and Beer [14] have investigated the solar activity of the last 10,000 years, finding strong indications of the De Vries/Suess cycle, and have predicted on these grounds a future temperature scenario. Babich *et al.* [15] have found periods of ~1000, ~500 to ~350, and ~200 years in paleoreconstruction of the last 2000 years,

* Address correspondence to this author at the HTW, University of Applied Sciences, Saarbrücken, Germany; Tel: 0049-6221-781052; E-mail: mohsedecke@t-online.de

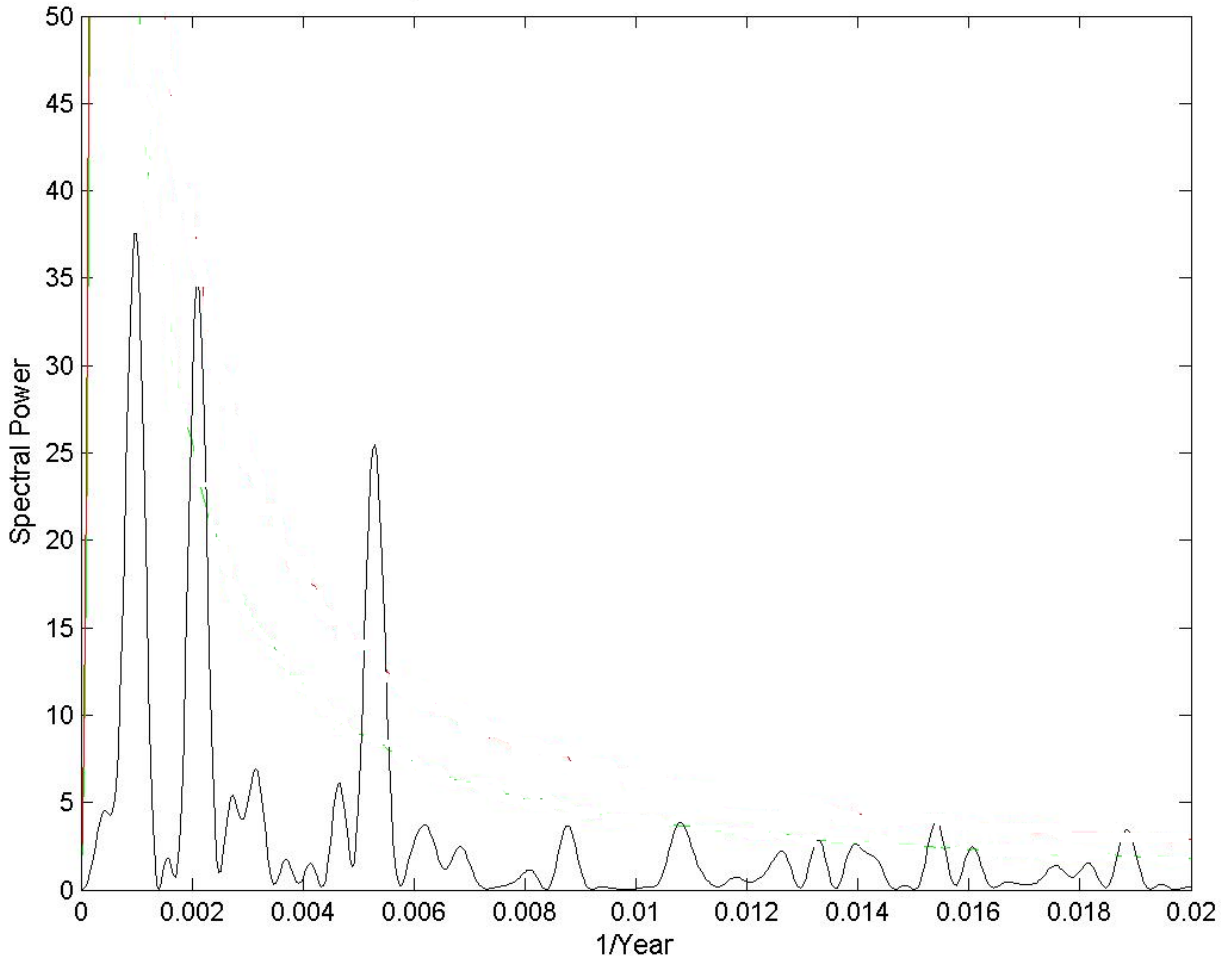
Locations of Temperature Proxies



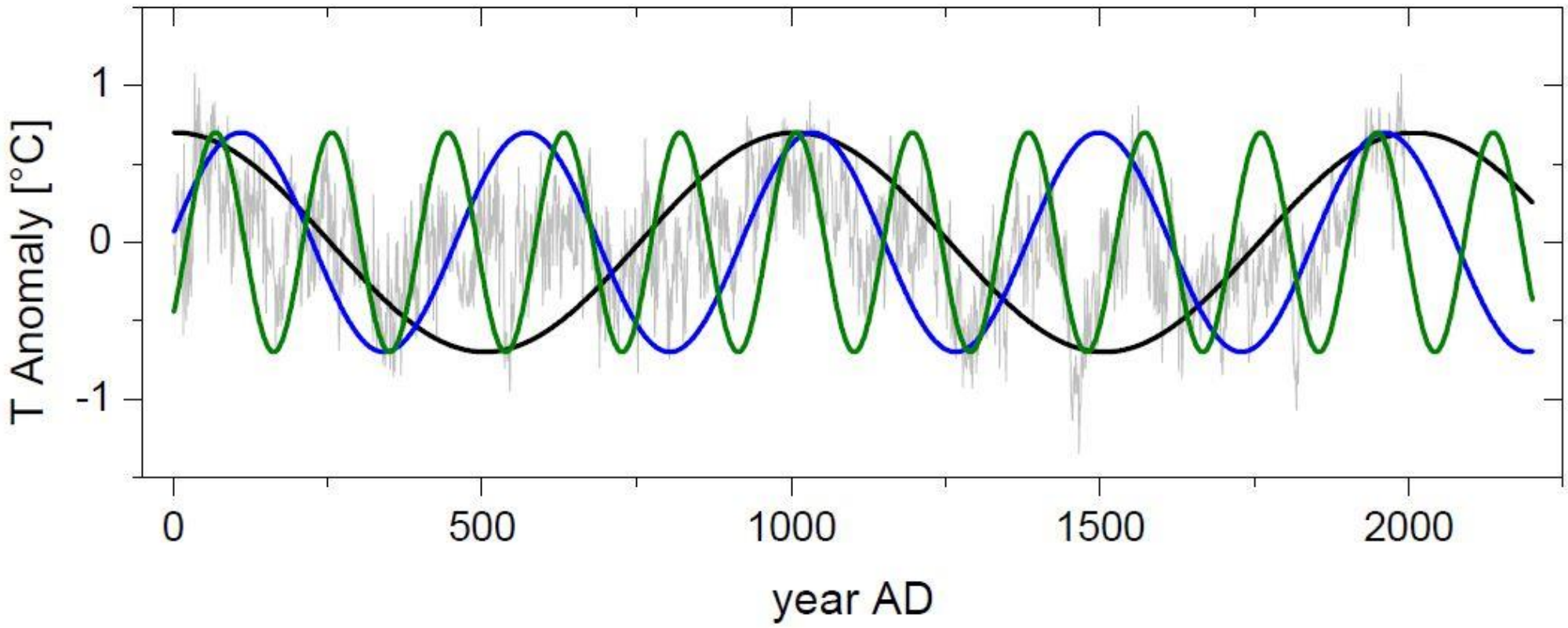
Green: tree rings, Blue: ice cores, Red: speleothems (stalagmites etc.),
Magenta: sediments, Black: other



2000 years of global climate from proxies

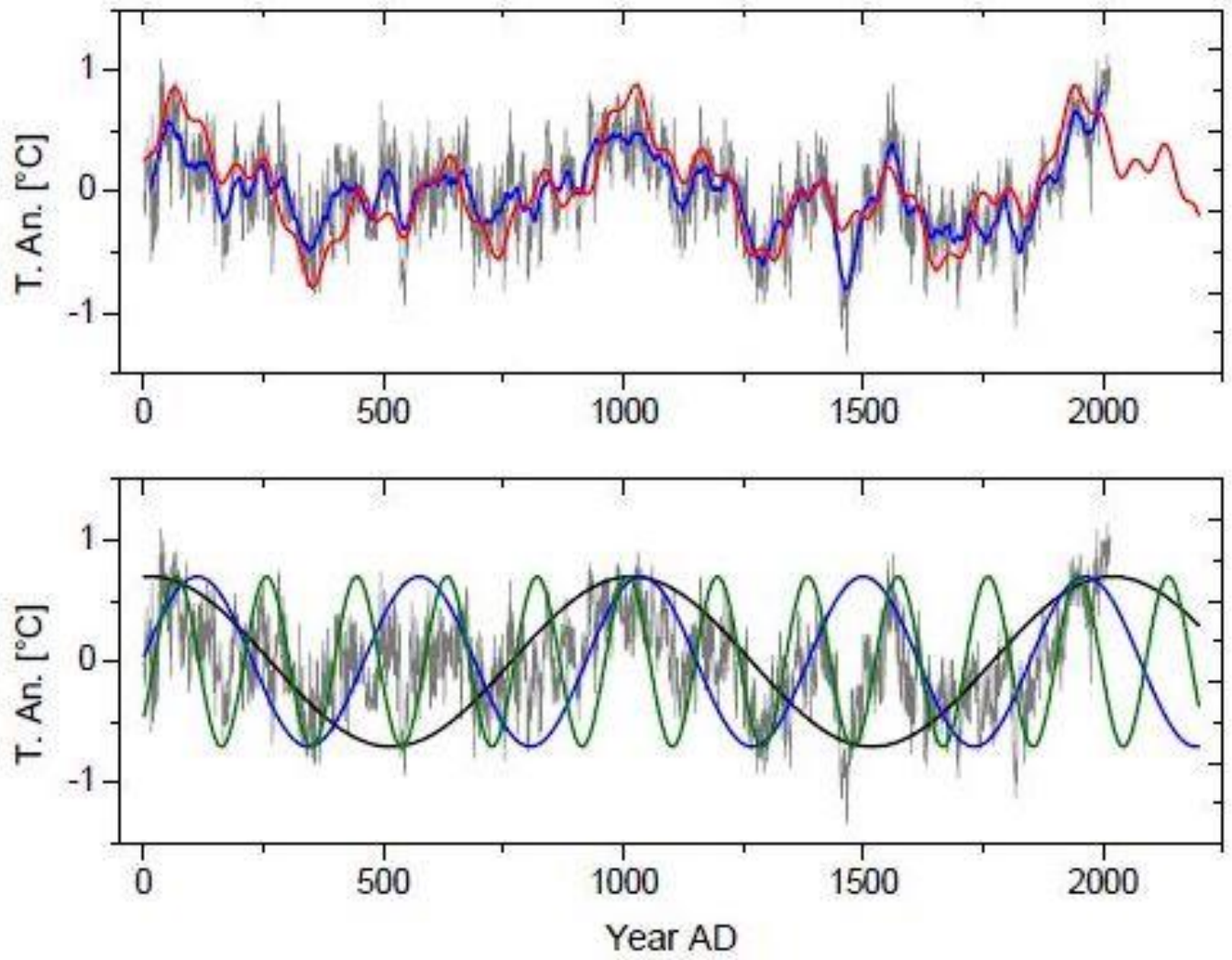


The 3 natural cycles: Eddy cycle 1033 years; Babich cycle 463 years;
De Vries cycle 190 years



Proxy temperatures (grey), and principal cycles.

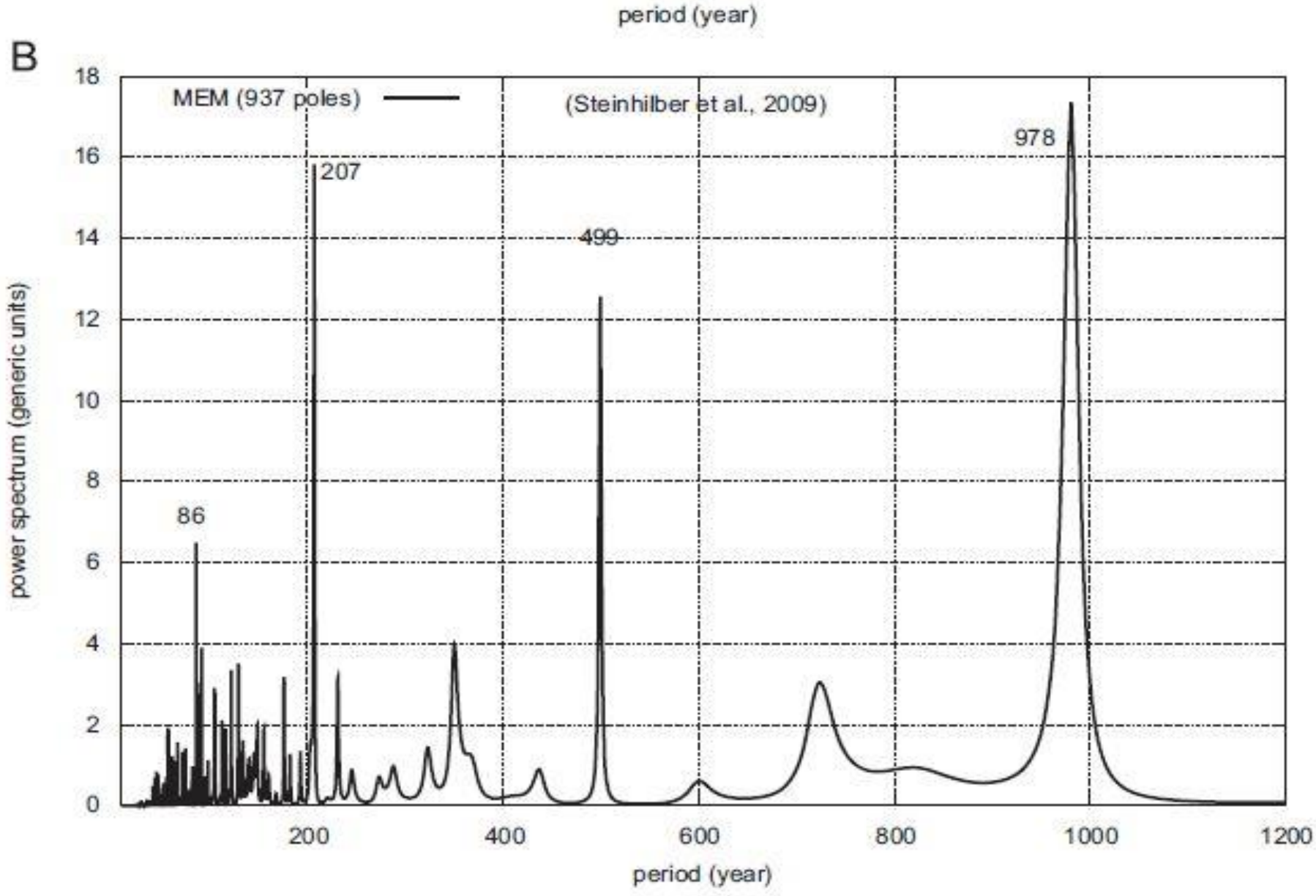
Eddy cycle: black, Babich cycle: blue, De Vries cycle: green



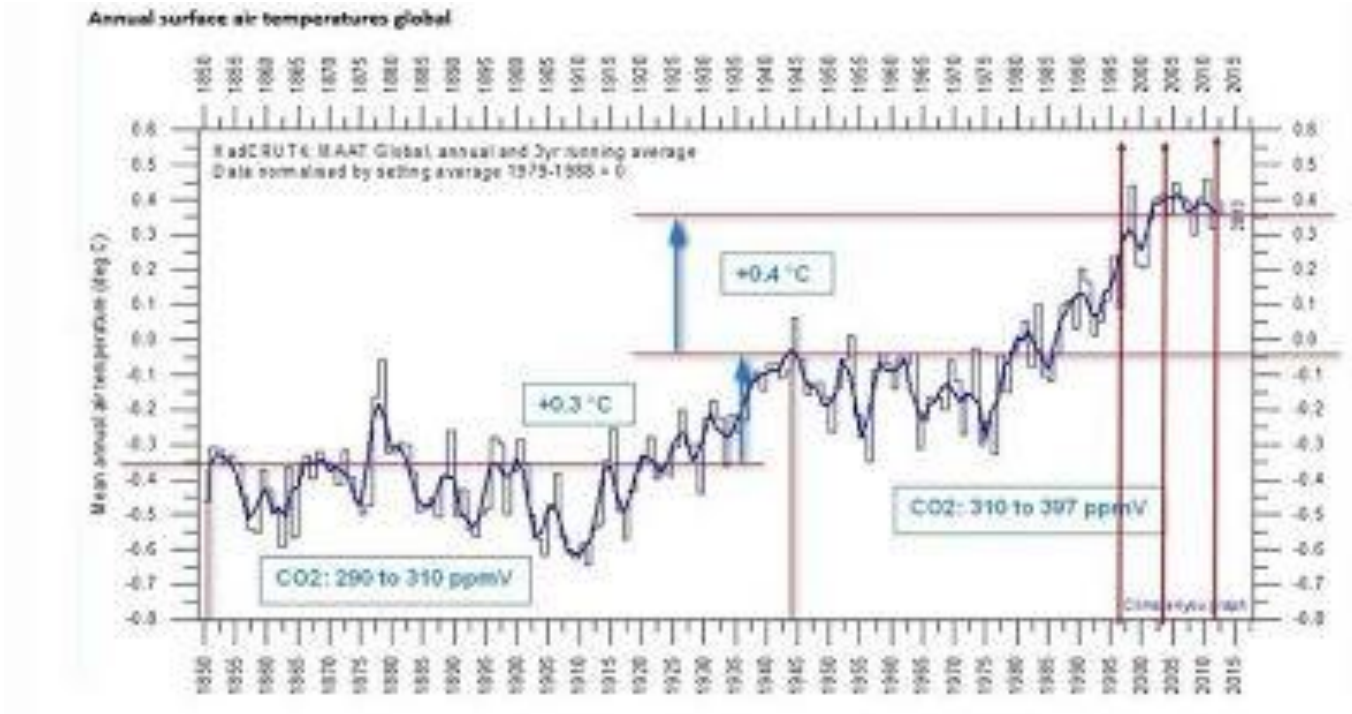
2000 years Earth climate and climate cycles

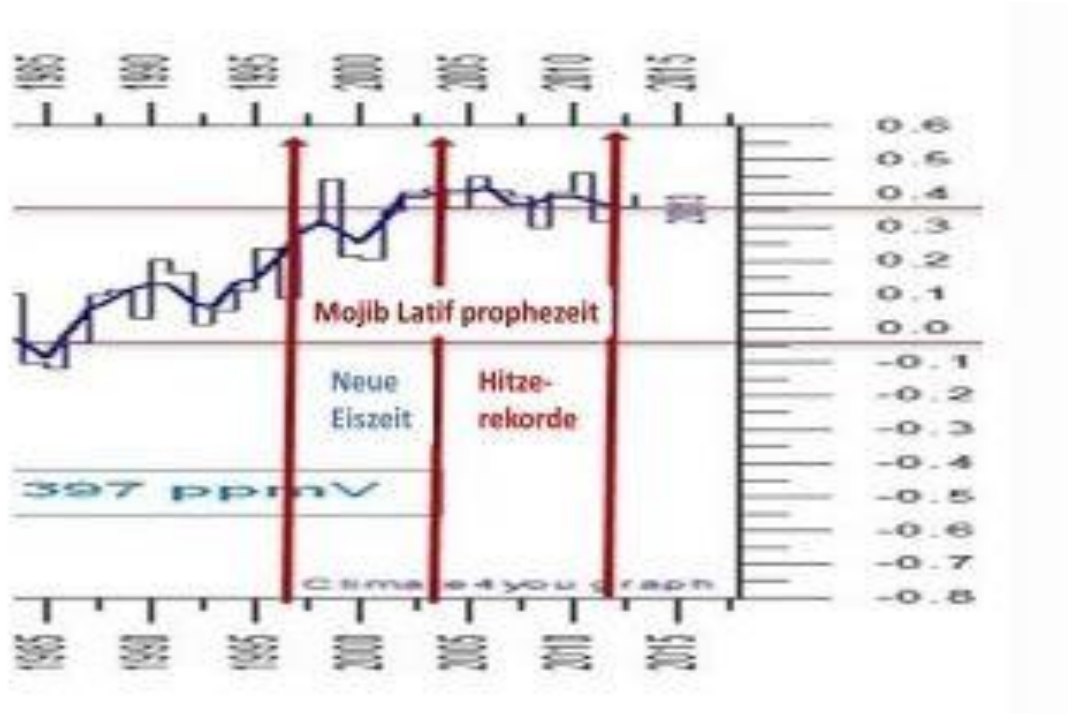
Thus, the warming from 1870 to now is NOT due to human influence.

BUT TO THE 3 MAIN CLIMATE CYCLES!



Solar activity from 8000 years of 10Be and 14C abundances





Recent global temperatures

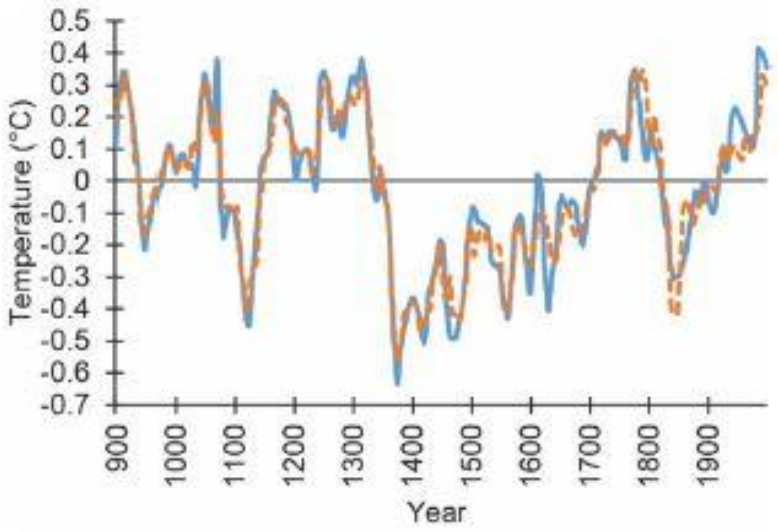


Fig. 4. Proxy temperature record (blue) and neural network output (orange) based on input from spectral analysis for regional southern South America multiproxy temperatures. Training period 900–1830; test period 1830–1995. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

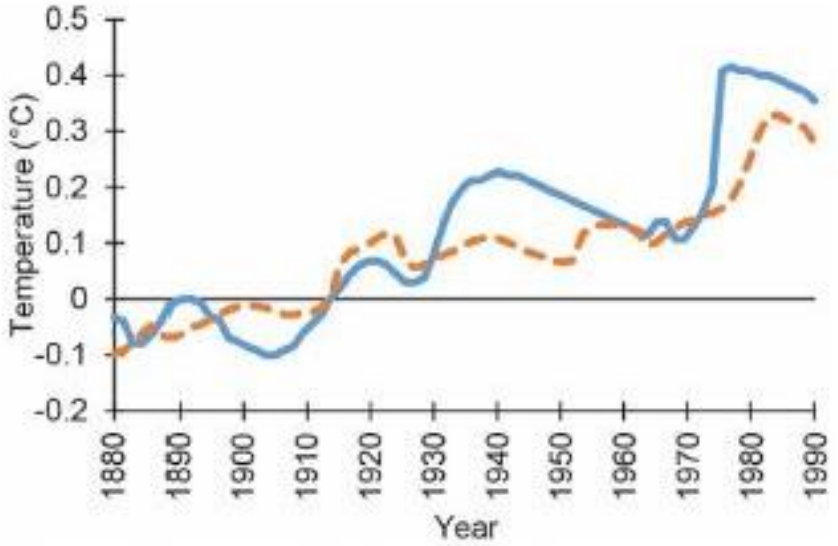
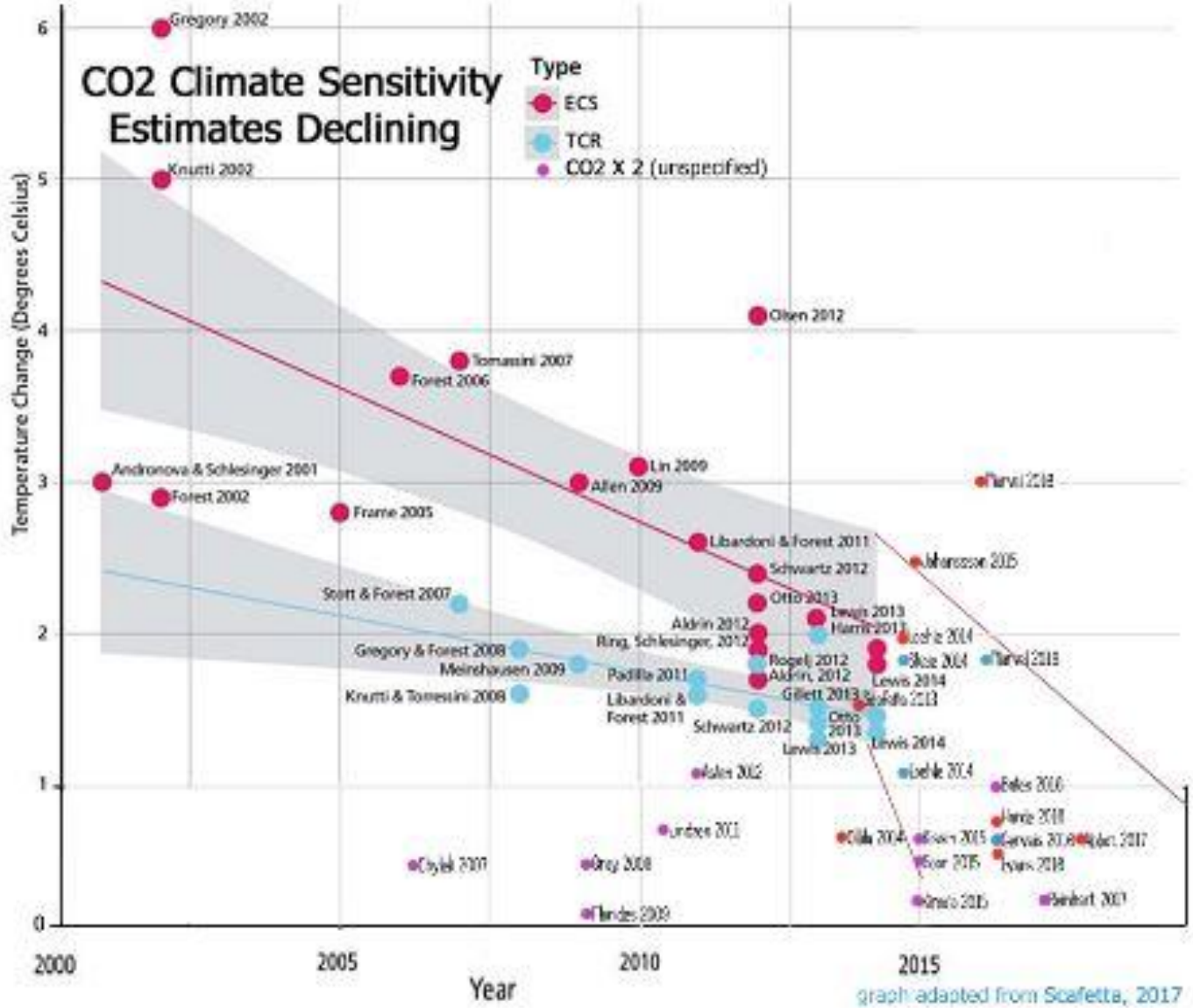
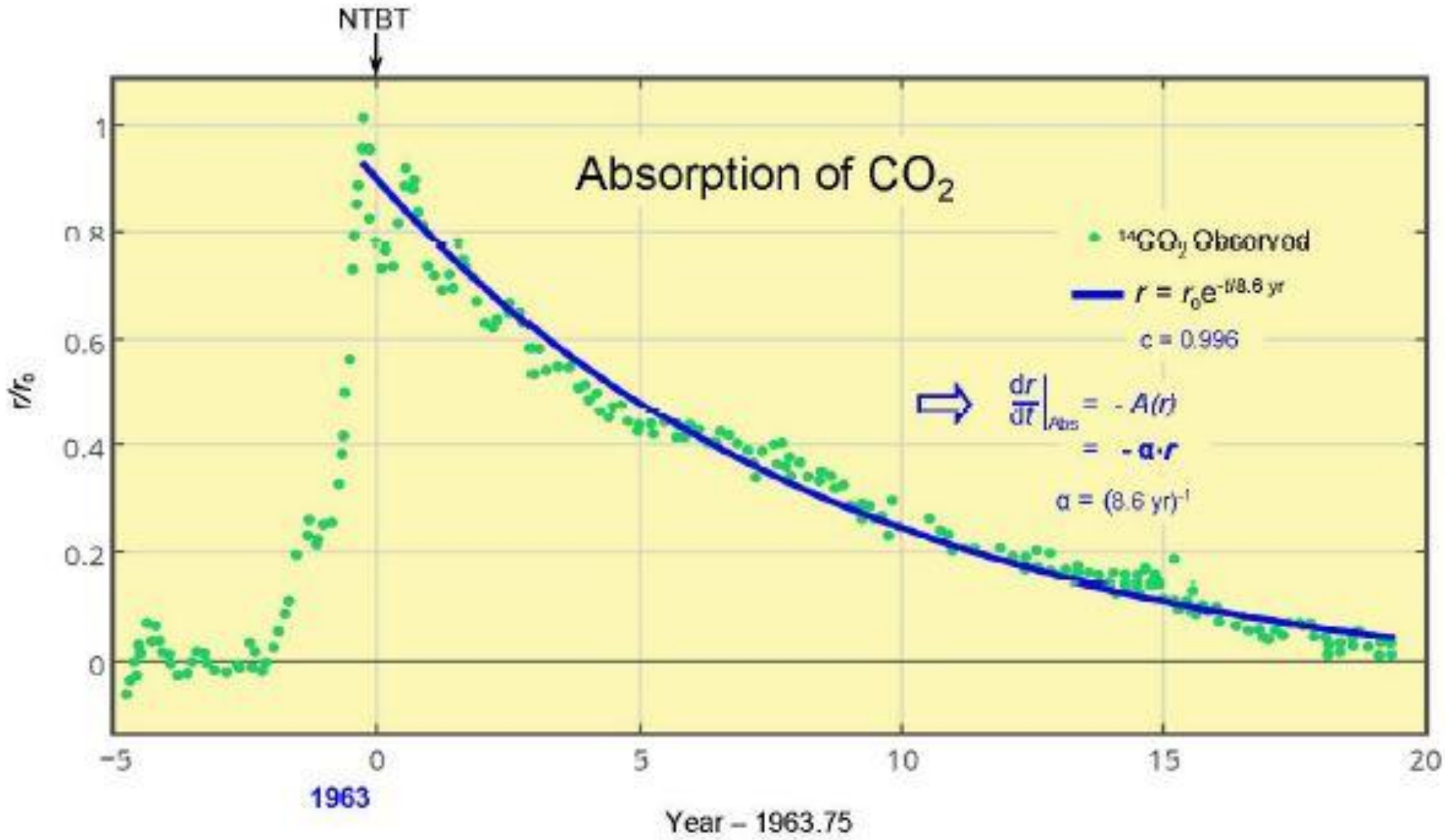


Fig. 5. Proxy temperature record (blue) and neural network projection (orange) for regional southern South America for test period 1880–1995. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

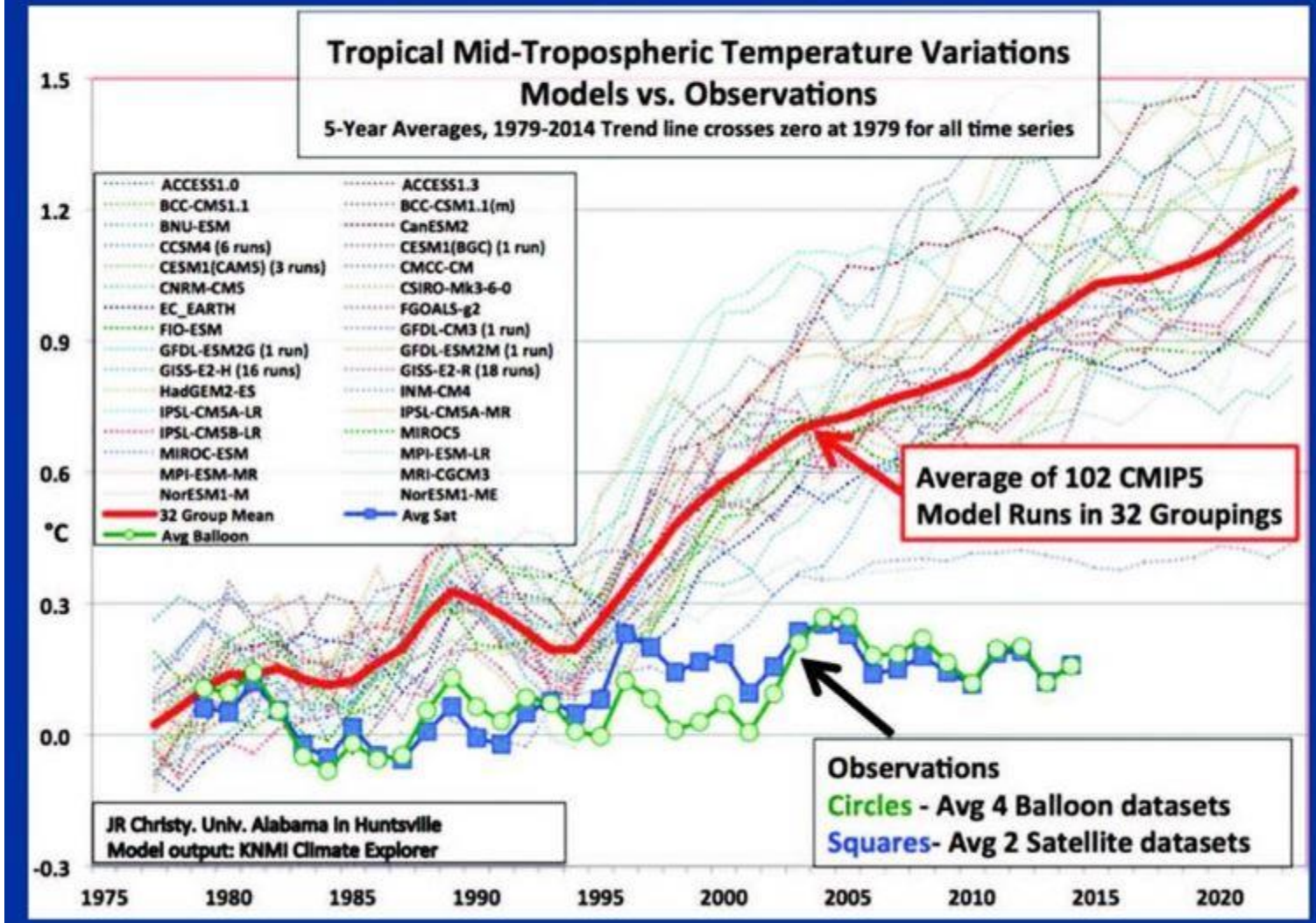
Neural network prediction of recent temperatures from proxies

For a more comprehensive list of over 60 papers with very low (<1°C) climate sensitivity estimates, see **here**.

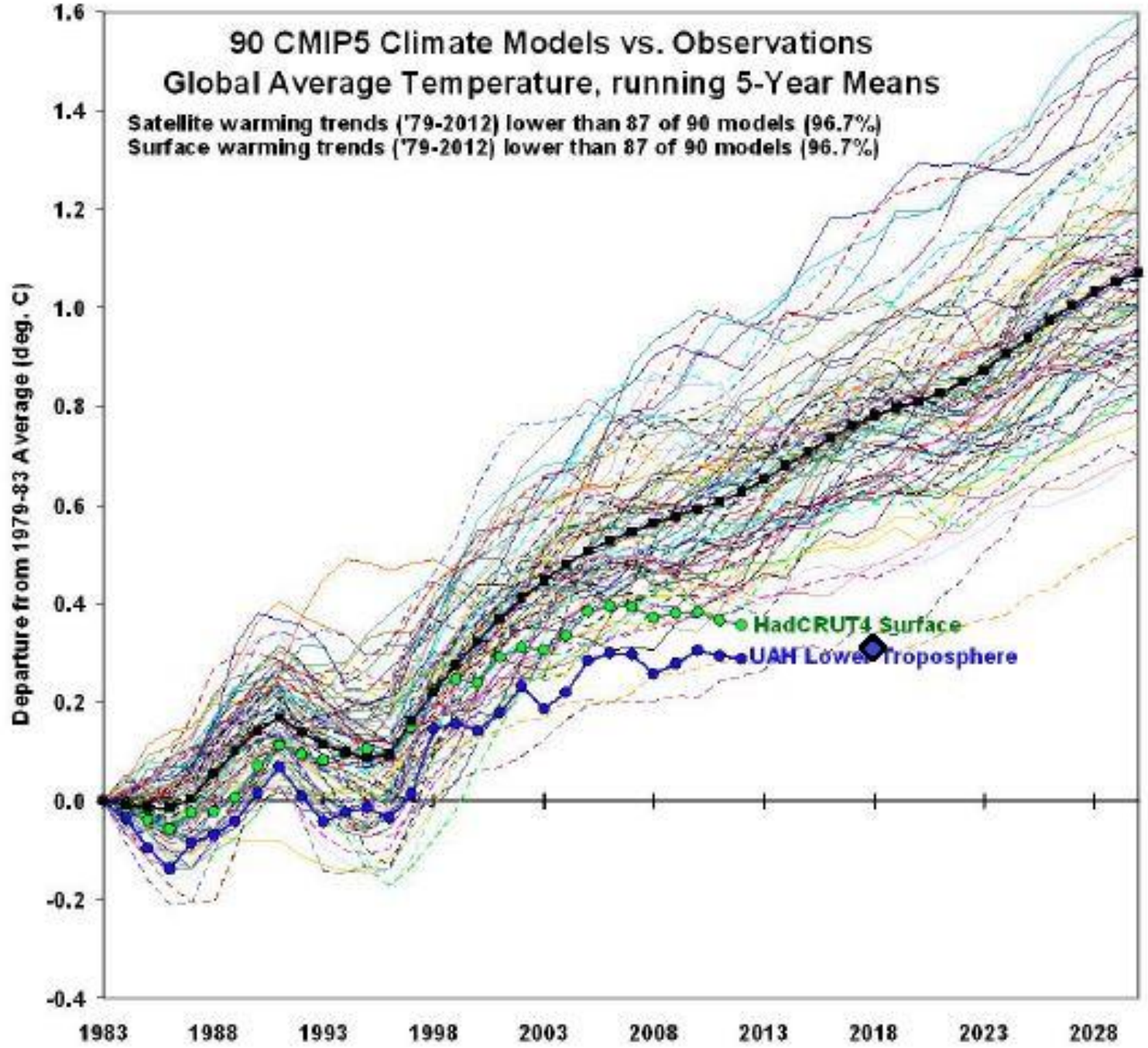



NTBT
Absorption of CO_2
$^{14}CO_2$ Observed
$r = r_0 e^{-t/8.6\ yr}$
c = 0.996
$\frac{dr}{dt}\Big|_{Abs} = -A(r)$
$= -\alpha \cdot r$
$\alpha = (8.6\ yr)^{-1}$
r/r_0
1
0.8
0.6
0.4
0.2
0
−5
0
5
10
15
20
1963
Year – 1963.75

Klimaerwärmung: Computer-Modelle und Wirklichkeit



Vergleich der Rechenergebnisse von Klimamodellen mit Messwerten, Temperatur-Mittelwerte über die tropische Troposphäre (0 bis ca. 15 km Höhe). Zur unmittelbaren Vergleichbarkeit wurden alle Kurven an den gleichen Ausgangspunkt angepasst (linearer Trend schneidet die Nulllinie im Jahr 1979, dem Beginn der Satellitenmessungen). Quelle: Testimony of John R. Christy, U. S. House Committee on Science, Space & Technology,2 Feb 2016.


90 CMIP5 Climate Models vs. Observations
Global Average Temperature, running 5-Year Means
Satellite warming trends ('79-2012) lower than 87 of 90 models (96.7%)
Surface warming trends ('79-2012) lower than 87 of 90 models (96.7%)
Departure from 1979-83 Average (deg. C)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
1983
1988
1993
1998
2003
2008
2013
2018
2023
2028
HadCRUT4 Surface
UAH Lower Troposphere