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US_Climate_ar4_wg1_Bemerkungen_fawi

Bemerkungen zum Artikel "Climate Change 2007 - The Physical Science Basis"

http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

Seite 24) Kein Anstieg des Deuteriums als Maß für die Temperatur? Wieso ist die Grafik auf Seite 444 anders?

Seite 27) Rückgang der Änderung der jährlichen Kohlendioxid-Konzentration von 1988 bis 1993

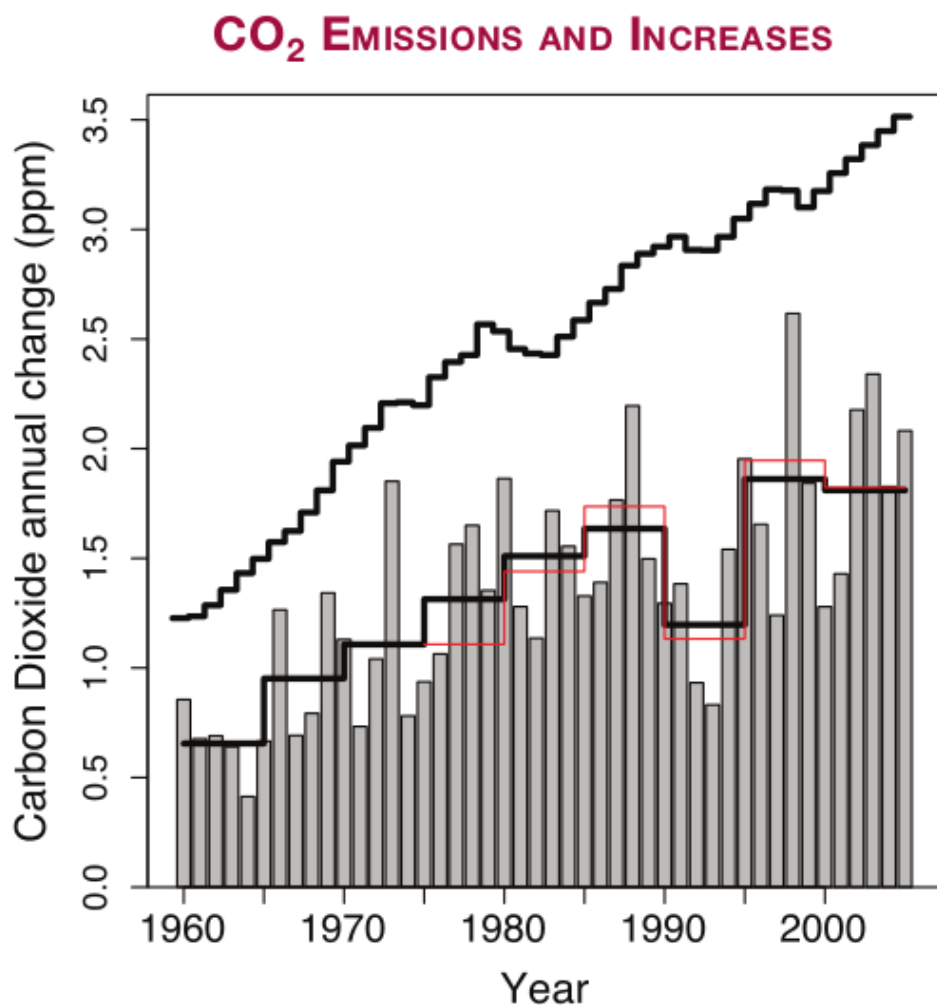


Figure TS.3. Annual changes in global mean CO₂ concentration (grey bars) and their five-year means from two different measurement networks (red and lower black stepped lines). The five-year means smooth out short-term perturbations associated with strong ENSO events in 1972, 1982, 1987 and 1997. Uncertainties in the five-year means are indicated by the difference between the red and lower black lines and are of order 0.15 ppm. The upper stepped line shows the annual increases that would occur if all fossil fuel emissions stayed in the atmosphere and there were no other emissions. {Figure 7.4}

Seite 28) Anomalously hot and stagnant conditions during the summer of 1988 were responsible for the highest surface-level ozone year on record in the north-eastern USA. The summer heat wave in Europe in 2003 was also associated with exceptionally high local ozone at the surface.

Changes in tropospheric ozone are linked to air quality and climate change. A number of studies have shown that summer daytime ozone concentrations correlate strongly with temperature. This correlation appears to reflect contributions from temperature-dependent biogenic volatile organic carbon emissions, thermal decomposition of peroxyacetylnitrate, which acts as a reservoir for nitrogen oxides (NO_x), and association of high temperatures with regional stagnation. Anomalously hot and stagnant conditions during the summer of 1988 were responsible for the highest surface-level ozone year on record in the north-eastern USA. The summer heat wave in Europe in 2003 was also associated with exceptionally high local ozone at the surface. {Box 7.4}

Seite 30) Sonne wird erst seit 28 Jahren richtig beobachtet und ist noch absolut unverstanden - bis auf den elfjährigen Sonnenfleckenzyklus.

Seite 36) The global average DTR (diurnal temperature range) has stopped decreasing. A decrease in DTR of approximately 0.1°C per decade was reported in the TAR for the period 1950 to 1993. Updated observations reveal that DTR has not changed from 1979 to 2004 as both day- and night time temperature have risen at about the same rate.

Seite 37) Globale Temperaturkurve stimmt sehr gut mit lokaler Deutschlandkurve überein.

A slightly longer arctic warm period, almost as warm as the present, was observed from 1925 to 1945, but its geographical distribution appears to have been different from the recent warming since its extent was not global.

Seite 41) **'Global dimming' is not global in extent and it has not continued after 1990. Reported decreases in solar radiation at the Earth's surface from 1970 to 1990 have an urban bias. Further, there have been increases since about 1990. An increasing aerosol load due to human activities decreases regional air quality and the amount of solar radiation reaching the Earth's surface. In some areas, such as Eastern Europe, recent observations of a reversal in the sign of this effect link changes in solar radiation to concurrent air quality improvements. (--> So kann man sich die Umweltplakette natürlich auch schön reden Hahaha !!!)**

Seite 45) Änderung der Schneebedeckung um 1988 !

Seite 55) **Temperaturen aus Bohrkernen und anderen Proxies rekonstruiert wirken sehr überzeugend ! Wieso weichen die verschiedenen Methoden bei höheren Temperaturen plötzlich weniger voneinander ab? Was ist das für eine Periode von 1000 Jahren, die man da sieht?**

Seite 62) Einfluß der Vulkanausbrüche stimmt überhaupt nicht mit Messungen überein !

Seite 69) Die Temperaturvorhersage wird nicht stimmen, da 2020 das Maximum erreicht ist (72 Jahre)

Seite **81**) Knowledge of the contribution of past solar changes to radiative forcing on the time scale of centuries is not based upon direct measurements and is hence strongly dependent upon physical understanding.

The geographical distribution and time evolution of the radiative forcing due to changes in aerosols during the 20th century are not well characterised.

Seite **84**) Global average sea level rise from 1961 to 2003 appears to be larger than can be explained by thermal expansion and land ice melting. (--> Was ???)

Seite **85**) **The lack of extensive networks of proxy data for temperature in the last 20 years limits understanding of how such proxies respond to rapid global warming and of the influence of other environmental changes.**

Seite **86**) **Greenhouse gas forcing alone during the past half century would likely have resulted in greater than the observed warming if there had not been an offsetting cooling effect from aerosol and other forcings. (--> In Fachkreisen nennt man sowas: "Sich etwas aus den Fingern saugen" !!!)**

Seite **108**) This period of low solar activity, now known as the Maunder Minimum, occurred during the climate period now commonly referred to as the Little Ice Age (Eddy, 1976). There is no exact agreement as to which dates mark the beginning and end of the Little Ice Age, but from about 1350 to about 1850 is one reasonable estimate.

The effects of galactic cosmic rays on the atmosphere (via cloud nucleation) and those due to shifts in the solar spectrum towards the ultraviolet (UV) range, at times of high solar activity, are largely unknown. The latter may produce changes in tropospheric circulation via changes in static stability resulting from the interaction of the increased UV radiation with stratospheric ozone.

Seite **115**) Water vapour is the most important greenhouse gas, and carbon dioxide (CO₂) is the second-most important one. Methane, nitrous oxide, ozone and several other gases present in the atmosphere in small amounts also contribute to the greenhouse effect.

Seite **135**) **In the troposphere, human activities have increased ozone through the release of gases such as carbon monoxide, hydrocarbons and nitrogen oxide, which chemically react to produce ozone. As mentioned above, halocarbons released by human activities destroy ozone in the stratosphere and have caused the ozone hole over Antarctica.**

Seite **190**) Total Solar Irradiance: Es gibt tatsächlich Periodizitäten im Bereich von 100 Jahren!

Some studies of cosmogenic isotopes (Jirikowic and Damon, 1994) and spectral analysis of the sunspot record (Rigozo et al., 2001) suggest that solar activity during the 12th-century Medieval Solar Maximum was comparable to the present Modern Solar Maximum.

Seite **192**) In terms of plausible physical understanding, the most likely secular increase in total irradiance from the 17th-century Maunder Minimum to current cycle minima is 0.04% (an irradiance increase of roughly 0.5 W m^{-2} in $1,365 \text{ W m}^{-2}$), corresponding to an RF11 of $+0.1 \text{ W m}^{-2}$.

Seite **444**) **Die derzeitige Warmphase zwischen zwei Eiszeiten (current interglacial oder auch "Holocene") sieht eigentlich auch nicht viel anders aus als die anderen davor !**

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