

Weak Point Analysis of the Hypothesis of the “Man Made Climate Change”

The following analysis is not a scientific study but a plausibility assessment of existing commonly accepted data by an engineer.

Since about 20 years established media is publishing a flood of articles, films and news about the man made „global warming“ or „climate change“. The message is that without an abandonment of the use of fossil fuel mankind is going to an apocalypse. This message is communicated in the kind of a brainwash.

Analyzing the communication about the „climate change“ a first finding is a very selective reporting. Local warm periods are attributed to the „climate change“. Other weather anomalies as the first snow fall in Cairo since 112 years in 2013 are not attributed to it (2). The statement “science is settled” gives a guidance that there is no fact oriented expert discussion about this hypothesis intended or it is directly refused (36). Critics of this hypothesis are usually not attacked by their thesis but their reputation and their employers (*hacked e-mails*). The wording as „denying climate change“ sounds like the communication of a religion.

Focusing on the statements of leading „climate scientists*“ of the last two decades examples: The Maledives should have sunken already (38). Al Gore told 2008 that the artic will be totally free of ice in 2013 .. (3). The Himalaya glaciers will become molten till 2035 or earlier reported the IPCC in 2007 (37). „The president has 4 years left to save the world““, James Hansen in the Guardian Jan. 17th, 2009 (1) (*hypothesis positive feedback loop*). The leading “climate scientists*” dealing with facts seems to be very flexible.

A scientific study with the thesis that the Penis is responsible for the climate change, Lindsay & Boyle (17)(18), mostly gender science, intended by the authors as a joke vs. political correctness, was contrary expectation published swiftly. It is to worry that ideology and religion are going to stand above science as in the middle age.

Conclusion: The communication of the supporters of this hypothesis seems to be more close to an ideology or religion than a scientific communication. The dealing with facts seems to be very flexible.

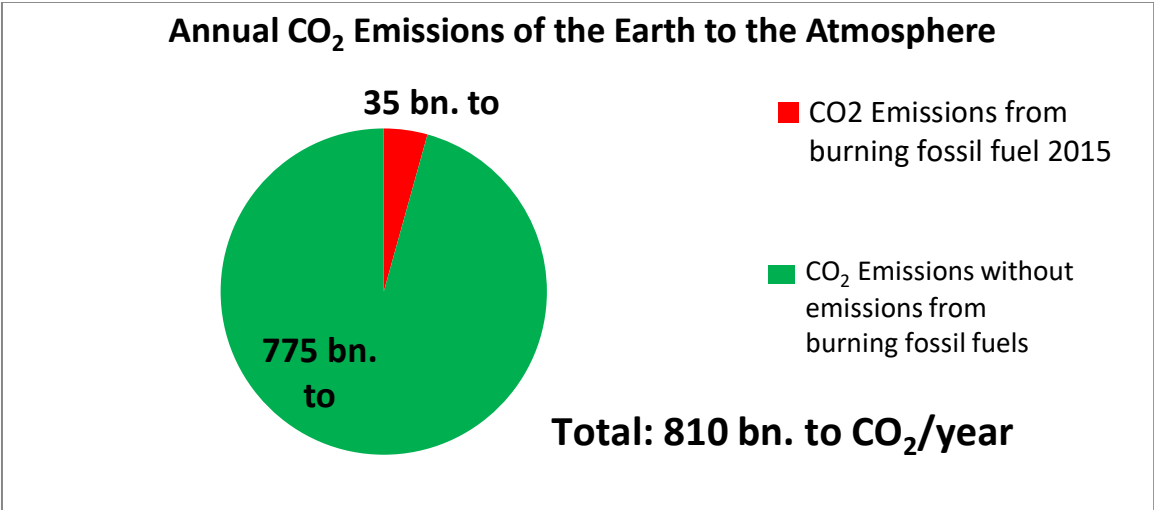
Die Hypothesis of the Climate Change

According to this hypothesis the CO₂ emitted by nature is absorbed by nature completely. The CO₂ added by the use of fossil fuels usage accumulates in the atmosphere. The resulting higher CO₂ level in the atmosphere increases the greenhouse effect and thus it is warming up the planet. Computer models predict this warming exactly with an accuracy of $\frac{1}{10}$ degree °C. Some reports mention a

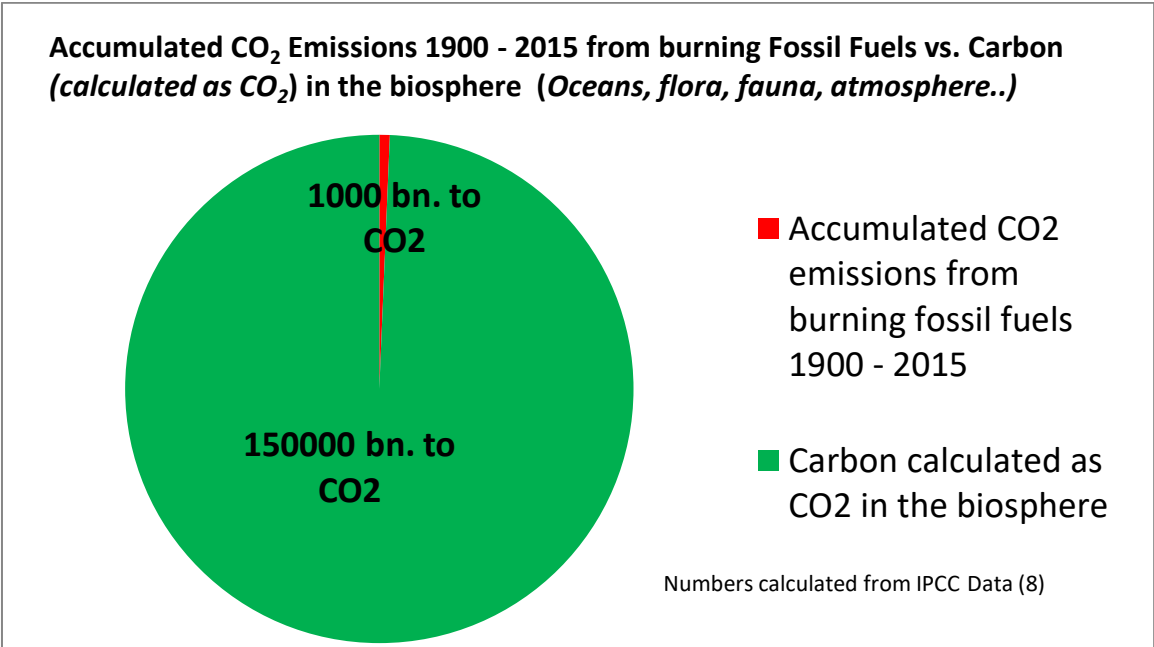
positive feedback loop. This warming is described as a general apocalypse for the planet and manhood if there is no turnaround.

Weak Point Carbon Cycle

The CO₂ emissions from burning fossil fuel can be calculated by the known consumption of fossil fuels, oil, coal and natural gas. In 2015 these emissions totaled 35 bn. tons/yr. (5). The total carbon emissions calculated as CO₂ mostly of natural origin are roughly estimated by the IPCC to 810 bn. to/yr. (8).

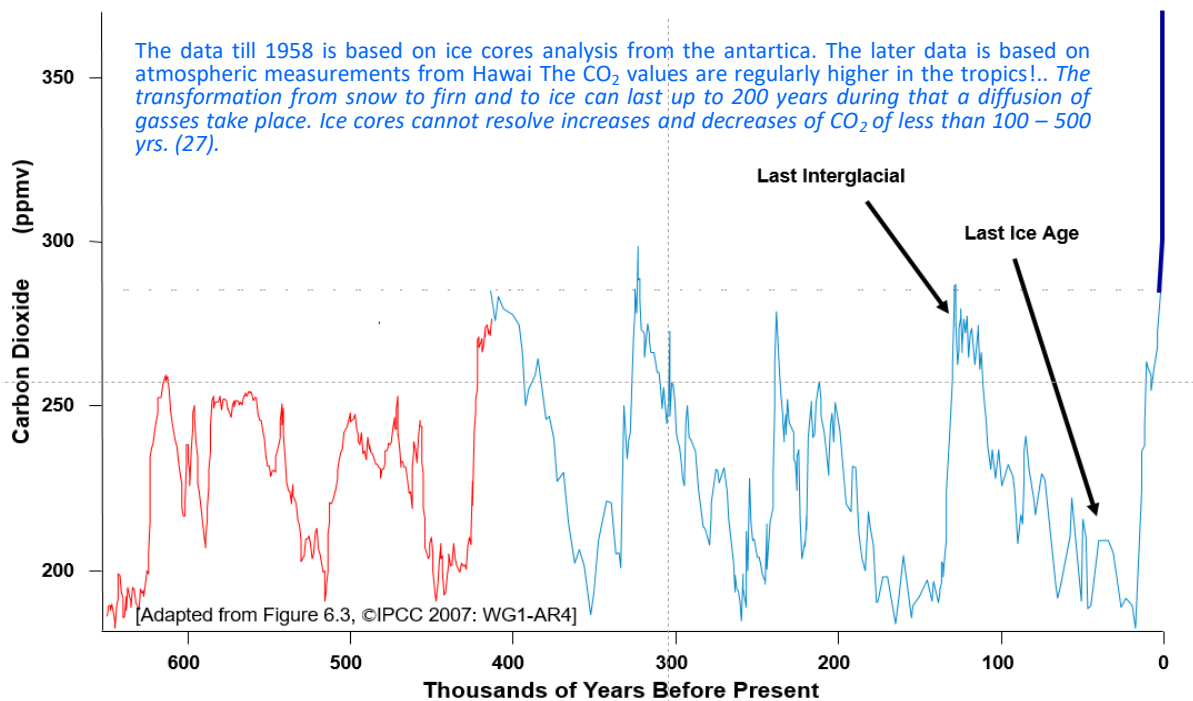


According to the hypothesis the nature can absorb exactly the varying by nature emitted quantity of CO₂. The tiny surplus from the usage of fossil fuel is accumulated in the atmosphere. The accumulated CO₂ emission from the usage of fossil fuel since 1900 is compared with the easy dissoluble carbon in the biosphere, the atmosphere, oceans, flora and fauna which are as well acc. to the IPCC reports in an intensive interchange. The diagram below shows this comparison with the IPCC (8) figures:



The oceans contain the majority of the solved carbon as CO_3^{2-} ions. The solvability of the seawater decreases with increasing water temperatures by app. 5%/C°. A temperature change of the oceans of 1°C is equivalent to a reduced solvability of 7 trillion to. CO_2 equivalent to 200 – fold the annual emissions from burning fossil fuels. Acc. to the „Climate scientists*“ the tropical sea emits CO_2 and the cold sea absorbs it. It is assumed that in case of a warming of the oceans the emitting area increases and in case of a cooling of the oceans large areas shifts in favor of an absorption of CO_2 .

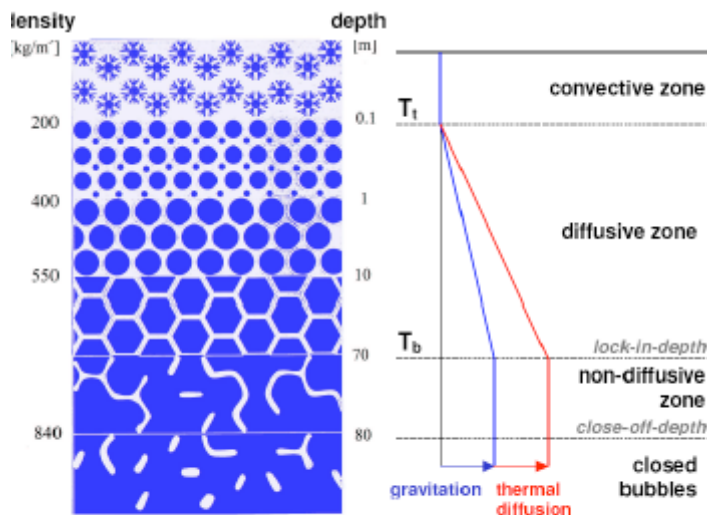
Historical share of CO_2 in the Atmosphere acc. IPCC



Ref. (7) Supplement in dark blue Susan Salomon IPCC WGI

Conclusion: It seems absurd that the insignificant CO_2 emissions from the usage of fossil fuels compared to the potentially much bigger fluctuations of the CO_2 emissions from oceans, unfreezing of the permafrost soil at the transitions from ice ages to warm ages and back, ceated an unusual increase of the share of CO_2 in the atmosphere.

The most pobable reason for the measured increase of the CO_2 concentration in the air is a systematic faulty estimation of the historic CO_2 concentration in the atmosphere. The IPCC data till 1958 is based on ice cores from the antartica and as of that time from atmospheric measurements from Hawaii. In paralell there are since 1811 accurate chemical methods to measure the CO_2 concentration of the atmosphere. Since 1857 the Pettenkofer Methode is used. The historic chemical CO_2 measurements, E.G. Beck(9,10), show systematic higher CO_2 values, some close to 400ppm, than the values obtained from measurements of ice cores and shown in the figure above.



Depending on temperatures snow- and rainfall fresh snow transforms within app. 200yrs. to a gas tight plastically glacier ice. Within this period gasses can diffuse and outgas. Further changes as the disappearing of the gas bubbles take place up to an ice depth of 840m (*Stauffer 1100m*)

The processing of ice cores is a brutal and dirty procedure that changes the specimen drastically (*Jaworowski 1994a, Jaworowski et al. 1990, Jaworowski et al. 1992a, (30)*)

Fig. 18: Development of the gas archive in ice cores [Schwander, 1996] (29)

Acc. to Jaworowsky (30) the data from ice cores is not suitable for a quantitative analysis of historic atmosphere data. The CO₂ data from ice cores are regularly 30 – 50% below the data of the original atmosphere. Other scientists got to other conclusions*****.

The probability that anomalous high CO₂ emissions from the oceans, for instance by upwelling**** (26) and melting permafrost soil go along with the end of the little ice age and cause a historic unparalleled increase of of the CO₂ share in the atmosphere seems very low.

The long term carbon circuit, CaO + CO₂ <-> limestone (CaCO₃) is only little explored. Most of the earth surface carbon is bound in limestone, calculated as CO₂ 126.000 trillion to CO₂(19). CaCO₃ is solved by the rain from limestone and sedimented in the sea (till app. 5000m water depth). In the deep sea lime stone is solved by the seawater. A shift in the sedimentation boundary could influence the short term carbon cycle. The low ¹³C isotope share in the atmosphere contradicts such hypothesis*****.

It seems very unlikely that the earth carbon cycle is estimated quantitative significantly too high, that the CO₂ emissions from burning fossile fuel might play the role given by the hypothesis of the “climate change”. In opposite critical scientists usually estimate the carbon quantities of the carbon cycle regularly higher than the IPCC.

Dynamic of the Carbon Cycle

The hypothesis of the „climate change“ assumes that the carbon cycle is a static process. A dynamic carbon cycle does not support the hypotheses of the “climate change”. But it seems necessary to expect a dynamic. A higher CO₂ partial pressure in the atmosphere resp. CO₃²⁻ concentration in the sea shifts chemical and biological processes in favor of a CO₂ absorption. It increases together with the higher temperature since the end of the little ice age (*app. 1850*) the growth of the vegetation. There are many biological organisms that react on higher temperatures and CO₂ concentrations with a higher rate of photosynthesis. Typical examples are the cyanobacterium *synechococcus (blue algae)* and C2 plants. It causes an increased sedimentation of CO₂ as CaCO₃ from corals, mussels, snails. This sedimentation is acc. to the IPCC figures 0,7 bn. to CO₂ /year negligible (8). This seems a bit strange. Lüdecke et al (35)***** a critics of the hypothesis investigated the dynamic of the carbon cycle and

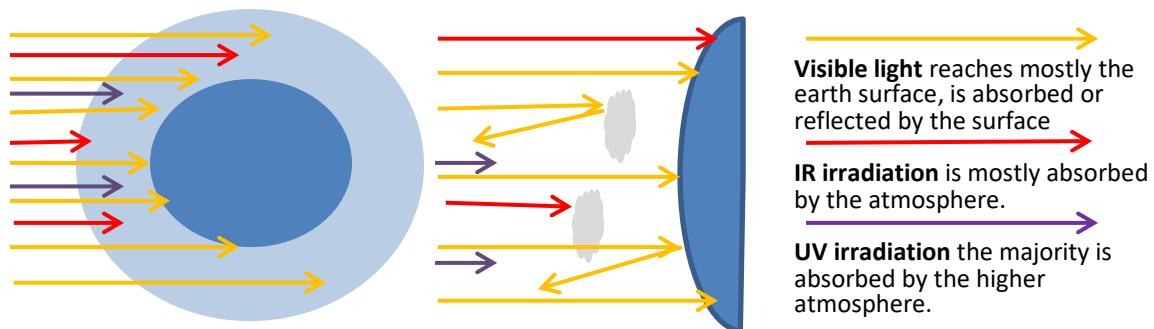
estimates that the max. CO₂ level of the atmosphere will not rise above 800ppm due to absorbing biological processes and will come down in the long term to a new equilibrium.

Positive Feedback Loop of the Carbon Cycle

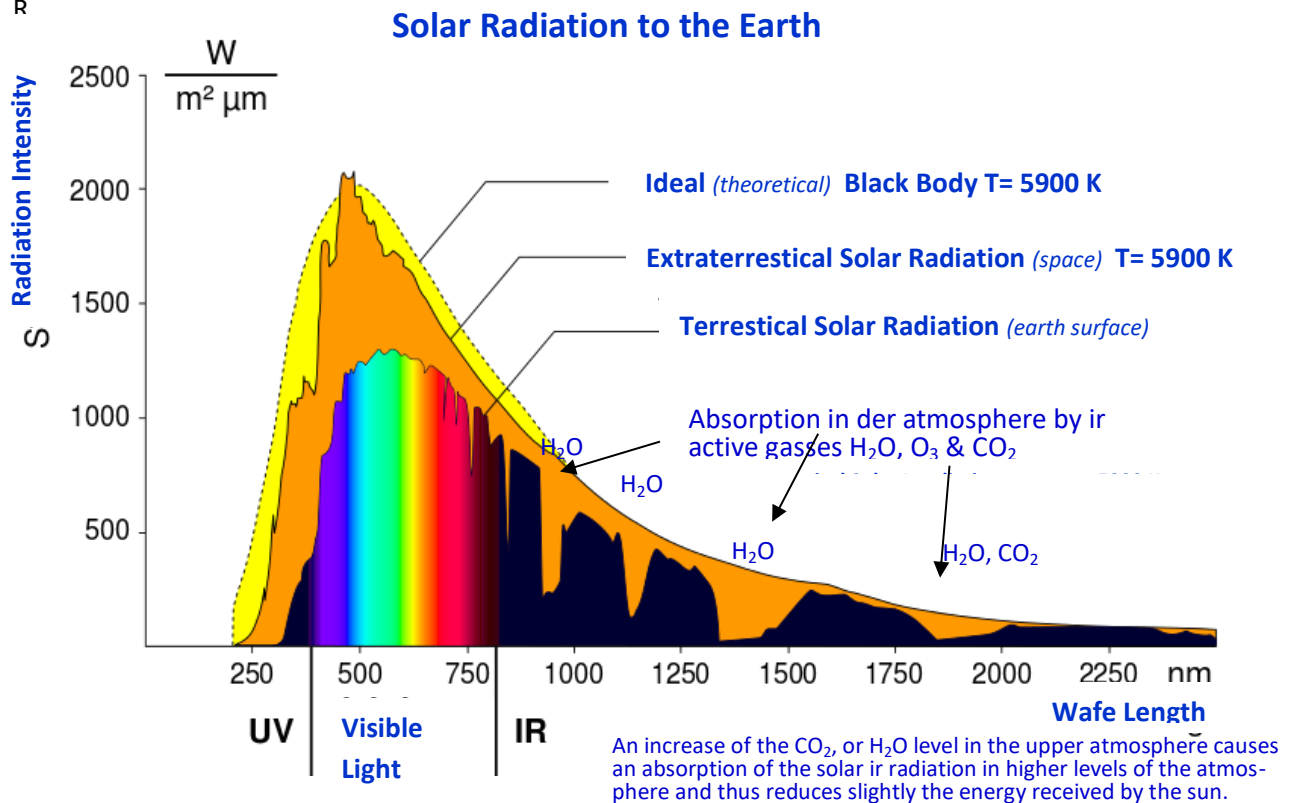
If the hypothesis of the „man made climate change“ is thought further, ex. Hansen („climate scientist*“), there is the challenge of a positive feedback loop. The CO₂ solvability of the seawater decreases about 5%/°C. That means a temperature increase of 1°C of the oceans could cause a potential emission of up to app. 7 trillion to CO₂/°C, plus CO₂ emissions from defrosting permafrost soil. It is an X-hundred fold of the annual emissions from burning fossil fuels. These emissions would increase according to the hypothesis of the climate change the temperature of the earth and these higher temperatures would further increase the CO₂ emissions from the oceans and the permafrost soil. There is acc. to some “climate scientists*” a trigger point for such a self-intensifying CO₂ level increase - climate warming feedback loop. The potential reasons that such a development did never happen during the last 600 mio. years might be acc. to my own assessment potentially the dynamic of the carbon cycle and a potentially very low sensitivity of the climate towards an increase of the CO₂ levels in the atmosphere.

Weak Point Greenhouse Effect

Due to its surface temperature of 5900 K (5630 °C) the sun emits most of its energy in the UV and the visible light spectrum.



R



Ref. (20) Wikipedia, Author Degreen, own comments/translations in blue

When the solar radiation hits the surface of the earth a major share of it is absorbed, the remainder is reflected back from the surface depending of the surface and the angle of impinge. The reflected share varies depending the kind of surface, the weather and the season. The IPCC estimates the share of reflected radiation called albedo to 0.3. The IPCC estimates with an albedo of 0.3 and without the greenhouse effect a „global average temperature“ of -18°C, equivalent a greenhouse effect of 33 °C. Acc. Jinan Cao these numbers are a result of false assumptions concerning the surface of the planet earth. It would be correct to take partly the atmosphere (*and clouds*) as surface of the body earth as a major part of the radiation from the earth is emitted from the atmosphere (*av. about 5500m height*) and the radiation temperature of the atmosphere in this height. It results in a lower albedo and hence a lower greenhouse effect as assumed in the IPCC global climate models.

The earth emits about the same quantity of energy as received back to the space. Received radiation + terrestrial heat + anthropogenic heat = emitted radiation. Otherwise the earth cools down or warms up till a new equilibrium is achieved. The radiation from the earth surface takes place in the infrared spectrum > 2.5μm due to the earth surface temperatures of - 40 – +50°C average temperature app. 288K (15°C). The use of an average temperature by this hypothesis provides an unnecessary inaccuracy. As the back radiation increase with exponent 4 the tropical regions with higher average temperatures participates above average significantly thus the average back radiation is stronger.

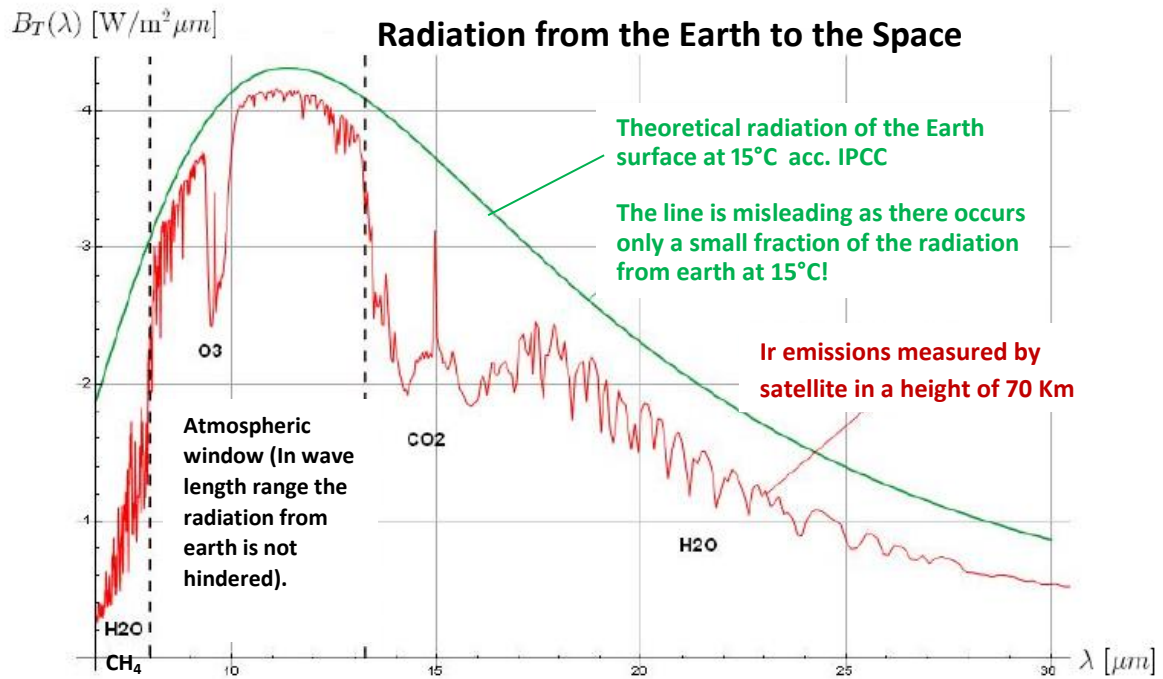
Asymmetric oscillating molecules have in certain wave length bands very high absorption cross sections for infrared radiation. It is called infrared active. The major infrared active molecules are:

H₂O app. 13000 ppm in the atmosphere, absorbs ir radiation in several wide band ranges

CO₂ app. 400 ppm in the atmosphere, absorbs ir radiation in 2 narrow band ranges at 4 and 15μm

CH₄ app. 2 ppm in the atmosphere

O₃ troposphere, stratosphere



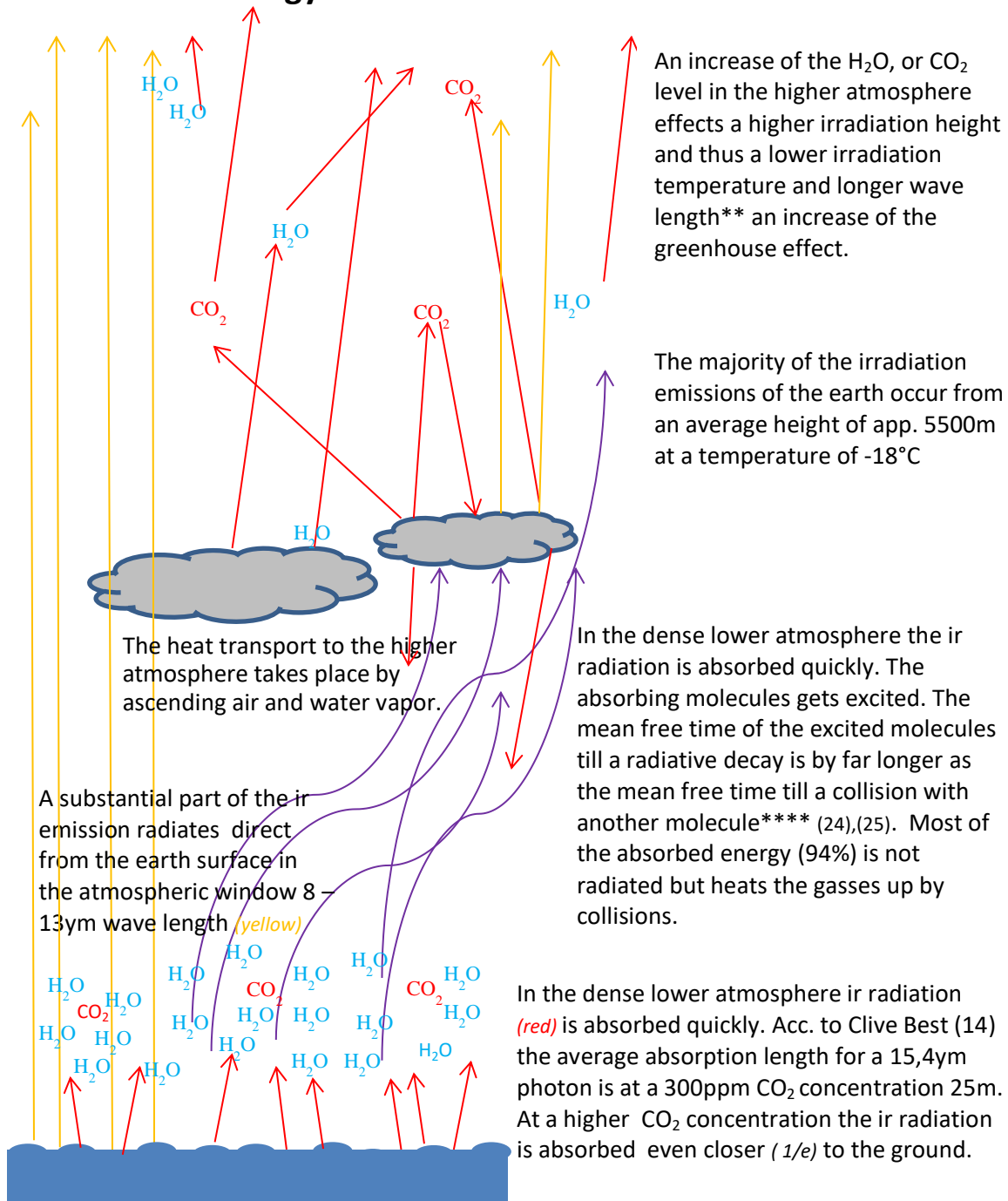
Radiation from earth, (red) earth surface and in a height of 70Km. Data simulated by MODTRAN

Ref. (13)

The figure above gives the impression that CO₂ has an important effect on the radiation from earth in the band between 13 – 17 μm . In many publications the gap in the irradiation between 13 and 17 μm wave length is communicated induced by increased CO₂ levels. A deeper gap is predicted for higher CO₂ concentrations.

The reality is by far more complex as the illustration seems to show. In the following figure the process of the energy transport from earth is sketched roughly. The majority of the radiation from the earth takes place in a height of 5500m in a long wave infrared spectrum.

Energy Emission from the Planet Earth



The estimates about the CO_2 sensitivity of the earth climate are based in many IPCC predictions/models on empiric data. Simplified the allegedly increased CO_2 concentration of the atmosphere is attributed to the temperature increase since the end of the little ice age and the claimed „climate change“. The hypothesis is used as a proof of the hypothesis.

Conclusion: The estimates about the CO_2 sensitivity of the earth climate are less than a guess. The greenhouse effect of the atmosphere is very complex. There are plenty of different qualitative estimations. A main differentiation between these estimations is the effect of the clouds. A quantification of the greenhouse effect, a quantification effect of the ir active gasses or a quantification of a potential temperature increase in case of a potential increase of the secondary

ir active gas CO₂ in the atmosphere would be a very, very tough scientific challenge. An appropriate calculation method could be a Monte Carlo simulation analog to the reactor physics with the cross sections of the atmospheric gasses in the different wave lengths, clouds, the different earth surfaces, latitudinal lines, weather, seasons, variations of the gas composition in combination with a calculation of the heat transmission. It could make plenty of nuclear research centers busy for decades.

The Effects of the Clouds

The clouds have a significant influence on the climate. Acc. to the „climate scientists*“ the clouds cause a warming and hence are participating in a positive feedback loop.

From a critical point of view the clouds increase the albedo (*reflexing of the solar radiation*) on the one hand and hence cause a cooling during the daytime. On the other hand the clouds cause a warming reflexing of the irradiation from the earth back to the earth.

The main effect of the water evaporation/clouds is the transport the heat from the earth to the higher atmosphere where it is radiated from earth. Acc. to Babkin (23) ¼ of the irradiated solar energy is dissipated by water evaporation. The evaporation from bodies of water and the vegetation increases strongly with increasing temperatures. Example: The evaporation from tropical seas is about 8 – 10 fold higher than that of polar seas. The water vapor is rising to the sky and condensing as clouds. The condensation energy is mainly emitted as ir radiation to the space.

Other Influences on the Climate

Beside the overemphasized influence of minor ir active gasses (CO₂) there are plenty of other influences on the climate as variations of the solar irradiation, cosmic influences ex. variations of the cosmic irradiation (29). Hard cosmic radiation causes ionization in the atmosphere. Ions are initial crystal nucleus for water vapor and thus influence the build-up of clouds in the atmosphere. The cloud coverage has a significant influence on the earth climate.

Stability of the Earth Climate

The earth climate is kept by 2 control mechanism that stable that sophisticated life did never extincted during the last 600 million years.

1. Acc. to the Stefan Boltzmann law the counter radiation of a body (earth) increases with the 4th power of the temperature $P = \sigma * A * T^4$ with $\sigma = 5,67 * 10^{-8} \text{ W/m}^2/\text{K}^4$
2. The water evaporation increases with increasing temperatures heavily, respectively decreasing heavily with decreasing temperatures. This control mechanism keeps the climate of the earth very steady. The temperature variation is much bigger in dry deserts than in wettish areas of the earth.

Conclusion: The hypothesis of the anthropogen CO₂ stimulated climate change is very poor. It is communicated similar to a religious confession of faith.

Further Remarks:

*"Climate Scientists" There are some wellknown natural scientists in the IPCC which have a representative role. Many of the leading people of the IPCC have close ties to the WWF, FOE, or Greenpeace (32,33,34). As these people usually have as well degrees in humanities/social – sciences the name „Climate scientists“ fits well.

**Acc. to the Wien's displacement law a black body radiation curve peaks at a wavelength that is inversely proportional to the temperature. The shift of that peak is a direct consequence of the Planck radiation law, which describes the spectral brightness of black body radiation as a function of wavelength at any given temperature. $\lambda_{\max} = b/T$, $b \approx 2900 \mu\text{m}\cdot\text{K}$

*** Rough translation..We do not even know the CO₂ absorption or emissions of the soil in Germany and there is barely another region of the world where the soil is better researched. There is plenty of further research required. „Oder schauen Sie sich die Böden in Deutschland an. Es gibt kaum eine andere Region auf der Erde, wo die Böden besser untersucht sind als hier. Aber dennoch wissen wir noch nicht, ob diese Böden eine Quelle oder eine Senke für Kohlendioxid sind. Es gibt also eine Reihe von Prozessen und Faktoren, die wir nicht richtig einordnen können. Modelle sind notwendig, aber ihre Ergebnisse darf man immer nur mit der nötigen wissenschaftlichen Skepsis beurteilen. Wir haben noch enorme Forschungsdefizite.“ (11)

****After an absorption event, the CO₂ molecule is in an excited state with an estimated lifetime, $\tau_{\text{rad}} = (\sum u_j / \Delta u_j)^2 / \nu \approx 6 \mu\text{s}$ for the 15 μm lines. This corresponds to the spontaneous radiative decay rate, $R_{\text{rad}} = 1.7 \times 10^5 \text{ s}^{-1}$. Collisions with the dominant gases of the atmosphere lead to a non-radiative decay. At sea level and $T = 288 \text{ K}$, the collision rate of all gas molecules is approximately the inverse of the mean free time between collision. Its value is $7 \times 10^9 \text{ s}^{-1}$. The present CO₂ concentration amounts to $c_{\text{CO}_2} = 400 \text{ ppm}$. This leads to a non-radiative collision rate with the CO₂ $R_{\text{non}} = 28 \times 10^5 \text{ s}^{-1}$. The chances of radiative emission in this situation is given by $R_{\text{rad}} / (R_{\text{rad}} + R_{\text{non}}) \approx 0.06$. In the troposphere, where most of the absorption takes place, most of the absorbed energy by the CO₂ heats the dominant atmospheric gases. This is, however, no longer the case in the stratosphere and even higher levels, where the collision rate is dramatically decreased. Infrared absorption of atmospheric carbon dioxide, F. K. Reinhart (25).

*****The solvability of CO₃²⁻ in seawater decreases with increasing water temperatures. The cold water in the deep sea is very rich on CO₃²⁻. If carbon rich deep sea water wells up at the coast vast quantities of CO₂ are emitted. Changes of ocean currents are able to influence the CO₂ concentration in the atmosphere.

*****Prof Stauffer mentions gas diffusion enrichment and depletion effects during forming process from snow to gas tight ice. But he does reject generally the use of ice cores for the assessment of historical atmospheres. (31)

***** The thesis of Prof. Luedecke et al examines the dynamics of the carbon cycle. It is based on the CO₂ data from ice cores. These values are at least questionable. The value of this thesis is the examination of a dynamics as such.

*****In nature there are 2 stable isotopes of carbon ¹²C 99% and ¹³C 1%. In the vegetation the isotope ¹²C is enriched. A high share of ¹²C is an indicator it is emitted from plants or burnt fossil fuel and not from the sea, vulcanos or limestone. .

References

- 1 (hier). <http://www.theguardian.com/environment/2009/jan/18/jim-hansen-obama>
2. <http://www.faz.net/aktuell/gesellschaft/kaltfront-im-nahen-osten-schneesturm-legt-jerusalem-lahm-12709502/sogar-in-aegypten-fiel-schnee-12709989.html>
3. https://static.pjmedia.com/user-content/24/files/2013/12/al_gore_polar_ice_caps_2008-1.mp4

4. Handelsblatt 02.05.2017 10:04 Uhr Klimawandel befeuert
Allergien <http://www.handelsblatt.com/technik/medizin/mediziner-warnen-klimawandel-befeuert-allergien/19741790.html>
5. Handelsblatt.de Statista Zugriff 04.05.2017.
<https://de.statista.com/statistik/daten/studie/37187/umfrage/der-weltweite-co2-ausstoss-seit-1751/>
6. Weltklimabericht 2014 <http://www.ipcc14.de/kommentare/14-glossar/a/11-albedo>
7. Assessing the Physical Science of Climate Change: IPCC Working Group 1 (2007) From Material Presented by Susan Solomon, co-chair WG I at the Royal Society London, March, 2007 and Norwegian Academy Of Sciences Oslo, Norway April 2007
8. IPCC Fourth Assessment Report: Climate Change 2007, Working Group I: The Physical Science Basis 7.3.1.1 The Natural Carbon Cycle Zugriff 07.05.2017
https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch7s7-3.html
9. Ist der Mensch wirklich an der Klimaerwärmung schuld? ew Jg. 106 (2007) Heft 20, Ernst Georg Beck,
10. 180 Years of Accurate CO₂ —Gas Analysis of Air by Chemical Methods, Ernst-Georg Beck, AIG NEWS No 86, November 2006
11. FAZ 29.10.2009 Klimawandel und Erdpolitik, Ein Limit von zwei Grad Erwärmung ist praktisch Unsinn, Reinhard Hüttl ist Direktor am Deutschen Geoforschungszentrum GFZ in Potsdam
http://www.faz.net/aktuell/wissen/klima/klimawandel-und-erdpolitik-ein-limit-von-zwei-grad-erwaermung-ist-praktisch-unsinn-1871912.html?printPagedArticle=true#pageIndex_2
12. Common errors in the use of the Stefan-Boltzmann equation Jinan Cao 08/2012
http://jonova.s3.amazonaws.com/guest/cao-jinan/jcao_common-errors-stefan-boltzman_aug2012.pdf
13. Absorption thermischer Strahlung durch atmosphärische Gase, Stefan Sirtl, Nov. 2010 Uni Freiburg.
14. Doubling CO₂ and basic physics, Posted on February 4, 2010 by Clive Best,
<http://clivebest.com/blog/?p=1169>
15. Climate change might mean the end of Britain's fish and chips, News.com.au, Charlotte Willis, 12.12.2016
<http://www.news.com.au/technology/environment/climate-change/climate-change-might-mean-the-end-of-britains-fish-and-chips/news-story/aa5ac1a9491de1adc86e2f80c0e22601>
16. Spiegel Online, Vorwürfe gegen Klimaforscher Wahn der Weltverbesserer, Teil 2, Donnerstag, 14.03.2013 12:37 Uhr, Von Axel Bojanowski, <http://www.spiegel.de/wissenschaft/natur/klimaforschung-streit-um-die-hockeyschlaeger-grafik-a-886334.html>
17. <http://www.20min.ch/wissen/news/story/-Der-Penis-ist-schuld-am-Klimawandel--18361037> «Der Penis ist schuld am Klimawandel» «Cogent Social Sciences»
18. The conceptual penis as a social construct, Lindsay & Boyle, Cogent Social Sciences (2017), 3: 1330439
<https://doi.org/10.1080/23311886.2017.1330439> SOCIOLOGY | RESEARCH ARTICLE, Received: 17 April 2017 Accepted: 11 May 2017, Published: 19 May 2017
19. Der Kohlenstoffkreislauf, Proseminar, Prof. Dr. Michael Matthies, Nadine Rühle, Jan Priegnitz 17.11.02
20. Wikipedia, Zugriff 02.06.2017, Ersteller DEGREEN
https://de.wikipedia.org/wiki/Sonnenstrahlung#/media/File:Sonne_Strahlungsintensitaet.svg

21. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (PDF). Cambridge University Press. ar4-wg2-chapter10, P493, Cruz, R.V.; H. Harasawa, M. Lal; S. Wu, Y. Anokhin; B. Punsalmaa, Y. Honda; M. Jafari, C. Li and N. Huu Ninh (2007).
22. Wie der syrische Bürgerkrieg mit dem Klimawandel zusammenhängt, Spektrum der Wissenschaft, Daniel Lingenhöhl, 02.03.2015, <http://www.spektrum.de/news/wie-der-syrische-buergerkrieg-mit-dem-klimawandel-zusammenhaengt/1335050>
23. ©Encyclopedia of Life Support Systems (EOLSS) HYDROLOGICAL CYCLE – Vol. II - Evaporation from the Surface of the Globe - V.I. Babkin
24. Skeptikerirrtümer III: Der Treibhauseffekt und die Thermalisierung, Michael Krueger, 29. Oktober 2014 <http://www.science-skeptical.de/klimawandel/skeptikerirrtuemer-iii-der-treibhauseffekt-und-die-thermalisierung/0012906/>
25. Infrared absorption of atmospheric carbon dioxide, F. K. Reinhart, Swiss Federal Institute of Technology, Lausanne, CH-1015 Lausanne, Switzerland, p4.
http://www.entrelemanetjura.ch/BLOG_WP_351/wp-content/uploads/2017/01/2017.01-20-FKR-sur-CO2.pdf
26. Der C-Kreislauf – ein neuer umfassender Ansatz!, Dr. Peter Vögele, Biologe, Eike 20.08.2017 <https://www.eike-klima-energie.eu/2017/08/20/der-c-kreislauf-ein-neuer-umfassender-ansatz/>
27. Van Hoof et al. , Tellus 57B, 351-355 (2005)
28. Fu, J. Phycology 43, (2007), 485-496
29. Karthaus Summer School: Ice Cores, Hubertus Fischer 08.10.2009
30. CO₂: The Greatest Scientific Scandal of Our Time, by Zbigniew Jaworowski, M.D., Ph.D., D.Sc., EIR March 16, 2007
31. DIE ZUSAMMENSETZUNG DER LUFT IN NATÜRLICHEM EIS, BERNHARD STAUFFER, Bern, Zeitschrift für Gletscherkunde und Glazialgeologie, Band 17, Heft 1 (1981), S. 57-78
32. Most IPCC coordinating lead authors work for WWF, Donna Laframboise of Men's New Daily, <https://motls.blogspot.com/2011/10/most-ipcc-lead-authors-work-for-wwf.html>
33. WWF Influence at the Highest Levels of the IPCC, Donna Laframboise, <https://nofrackingconsensus.com/2011/10/04/wwf-influence-at-the-highest-levels-of-the-ipcc/>
34. Streit um Greenpeace in IPCC-Bericht, dpa, <https://www.tagesspiegel.de/wissen/streit-um-greenpeace-in-ipcc-bericht/4402718.html>
35. Simple Model for the Anthropogenically Forced CO₂ Cycle Tested on Measured Quantities Horst-Joachim Lüdecke and Carl Otto Weiss, Journal of Geography, Environment and Earth Science International 8(4): 1-12, 2016; Article no.JGEESI.30532, ISSN: 2454-7352 SCIENCEDOMAIN international, Published: 5th January 2017
36. CLIMATE ALARMISTS THROW TEMPER TANTRUM, REFUSE TO DEBATE SKEPTICS, The Guardian, Michael Bastasch | Energy Editor, 4:48 PM 08/27/2018, [HTTPS://DAILYCALLER.COM/2018/08/27/CLIMATE-ALARMISTS-GLOBAL-WARMING/](https://dailycaller.com/2018/08/27/climate-alarmists-global-warming/)
37. IPCC Finally Acknowledges Its “Himalayan Blunder”. American Scientific Guest Blog, By Pallava Bagla on April 4, 2014, <https://blogs.scientificamerican.com/guest-blog/ipcc-finally-acknowledges-its-e2809chimalayan-blundere2809d/>

38. Threat to Islands, The Canberra Times sept. 26, 1988 <https://wattsupwiththat.com/2018/10/03/fail-30-year-old-climate-prediction-proves-to-be-a-load-of-bunkum/>