# Labor-Experiment: Eine $CO_2$-Zunahme von 0,04% auf 100% würde keine merkbare Erwärmung mit sich bringen!

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**Beobachtungen und Experimente stützen einen großen Antriebs-Effekt von $CO_2$ nicht**

Reale Beobachtungen im Freien zeigen, dass selbst eine massive Schwankung der $CO_2$-Konzentration, von 0,1 % bis 75 % während eines 24-Stunden-Zeitraums über einem Acker keinen nachweisbaren Effekt bei der Anregung von Änderungen der Oberflächentemperatur hat. Stattdessen ändert sich die $CO_2$-Konzentration als Reaktion auf die Temperatur.

Experimente in Innenräumen zeigen auch, dass es einen sehr kleinen Temperaturunterschied gibt, wenn man 100 % $CO_2$ in einen Behälter gibt. Und selbst diese winzige Temperaturänderung kann auf die Verringerung des konvektiven Kühleffekts durch die Zugabe von $CO_2$-Molekülen zurückgeführt werden, nicht auf den Strahlungs- oder „Treibhauseffekt“ von $CO_2$.

Es wird auch kein Temperaturunterschied festgestellt, wenn man die „Heiz“-Kapazität von $CO_2$ mit der eines Nicht-Treibhausgases wie Argon vergleicht (Wagoner et al. 2010), da die *„Temperatur um ungefähr den gleichen Betrag und mit der gleichen Rate wie bei $CO_2$ anstieg“*, wenn 100% Argon verwendet wurde.

**Eine weitere Studie stellt Behauptungen einer die Temperatur treibenden Auswirkung von $CO_2$ in Frage**

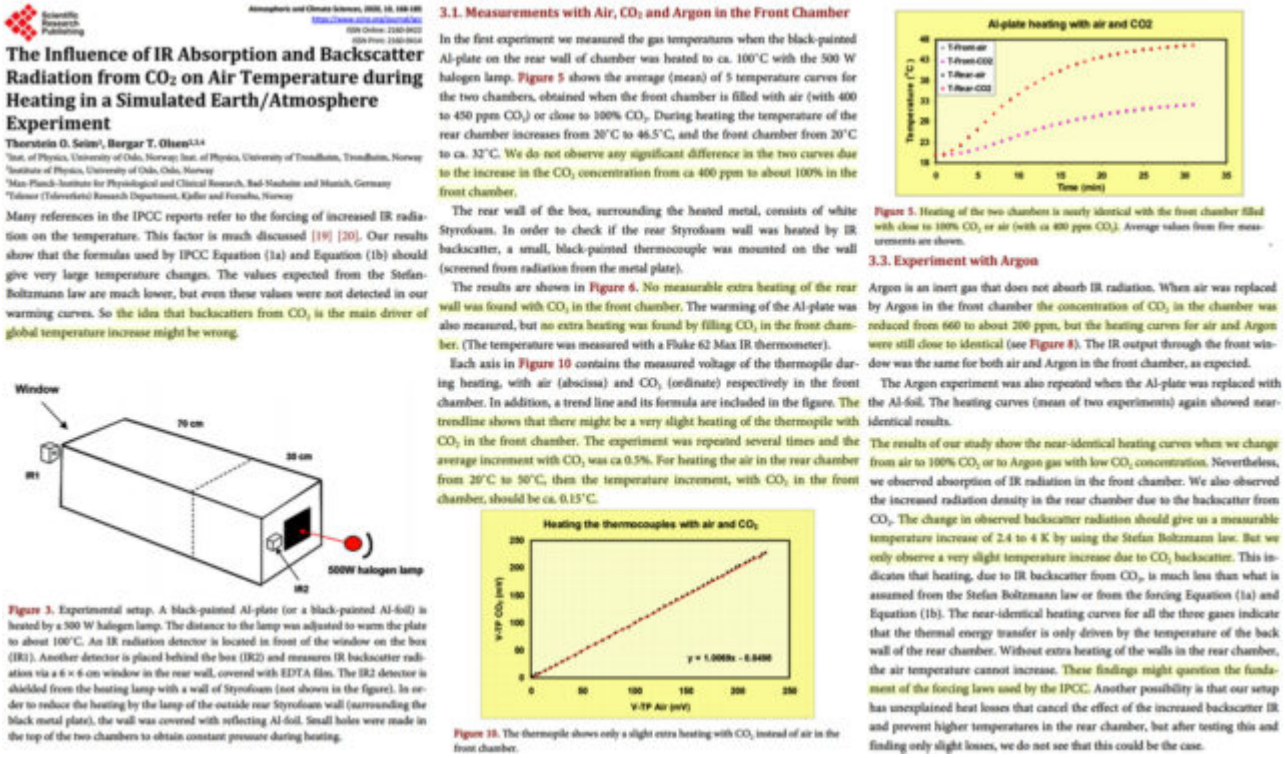
Und nun bestätigt eine kürzlich veröffentlichte Studie (Seim und Olsen 2020) diese experimentellen Beobachtungen weiter. Die Autoren testeten die treibende Wirkung erhöhter IR-Strahlung auf die Temperatur mit einer speziell konstruierten meterlangen Kammer, einer 500-Watt-Halogenlampe und IR-Strahlungsdetektoren.

Die Grundannahme der Treibhaustheorie ist, dass eine Erhöhung der $CO_2$-Konzentration um einen Faktor 2 oder mehr (d.h. von 0,03% auf 0,06%) zu einer zusätzlichen Erwärmung von 2 bis 4 Grad (mindestens) führt, was mit den Erwartungen des Stefan-Boltzmann-Gesetzes übereinstimmt.

Anstatt diese starken Temperaturreaktionen auf steigende $CO_2$-Konzentrationen zu beobachten, fanden Seim und Olsen heraus, dass es fast überhaupt keinen Effekt gibt – vielleicht höchstens zusätzliche 0,15°C – wenn man reines (100%) $CO_2$ in eine halogenbeheizte Kammer (+30°C) gibt. Es gibt nicht einmal einen nachweisbaren

Temperaturunterschied, wenn man die Temperatureffekte von $CO_2$ mit einem Nicht-Treibhausgas wie Argon vergleicht.

Die Ergebnisse dieser Experimente veranlassten die Autoren dazu, „*das Fundament der vom IPCC verwendeten Forcing-Gesetze in Frage zu stellen*.“



The Influence of IR Absorption and Backscatter Radiation from $CO_2$ on Air Temperature during Heating in a Simulated Earth/Atmosphere Experiment

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Many references in the IPCC reports refer to the forcing of increased IR radiation on the temperature. This factor is much discussed [19] [20]. Our results show that the formulas used by IPCC Equation (1a) and Equation (1b) should give very large temperature changes. The values expected from the Stefan-Boltzmann law are much lower, but even these values were not detected in our warming curves. So the idea that backscatters from $CO_2$ is the main driver of global temperature increase might be wrong.

Window
70 cm
30 cm
IR1
500W halogen lamp
IR2

Figure 3. Experimental setup. A black-painted Al-plate (or a black-painted Al-foil) is heated by a 500 W halogen lamp. The distance to the lamp was adjusted to warm the plate to about 100°C. An IR radiation detector is located in front of the window on the box (IR1). Another detector is placed behind the box (IR2) and measures IR backscatter radiation via a 6 × 6 cm window in the rear wall, covered with EDTA film. The IR2 detector is shielded from the heating lamp with a wall of Styrofoam (not shown in the figure). In order to reduce the heating by the lamp of the outside rear Styrofoam wall (surrounding the black metal plate), the wall was covered with reflecting Al-foil. Small holes were made in the top of the two chambers to obtain constant pressure during heating.

3.1. Measurements with Air, $CO_2$ and Argon in the Front Chamber

In the first experiment we measured the gas temperatures when the black-painted Al-plate on the rear wall of chamber was heated to ca. 100°C with the 500 W halogen lamp. Figure 5 shows the average (mean) of 5 temperature curves for the two chambers, obtained when the front chamber is filled with air (with 400 to 450 ppm $CO_2$) or close to 100% $CO_2$. During heating the temperature of the rear chamber increases from 20°C to 46.5°C, and the front chamber from 20°C to ca. 32°C. We do not observe any significant difference in the two curves due to the increase in the $CO_2$ concentration from ca 400 ppm to about 100% in the front chamber.

The rear wall of the box, surrounding the heated metal, consists of white Styrofoam. In order to check if the rear Styrofoam wall was heated by IR backscatter, a small, black-painted thermocouple was mounted on the wall (screened from radiation from the metal plate).

The results are shown in Figure 6. No measurable extra heating of the rear wall was found with $CO_2$ in the front chamber. The warming of the Al-plate was also measured, but no extra heating was found by filling $CO_2$ in the front chamber. (The temperature was measured with a Fluke 62 Max IR thermometer).

Each axis in Figure 10 contains the measured voltage of the thermopile during heating, with air (abscissa) and $CO_2$ (ordinate) respectively in the front chamber. In addition, a trend line and its formula are included in the figure. The trendline shows that there might be a very slight heating of the thermopile with $CO_2$ in the front chamber. The experiment was repeated several times and the average increment with $CO_2$ was ca 0.5%. For heating the air in the rear chamber from 20°C to 50°C, then the temperature increment, with $CO_2$ in the front chamber, should be ca. 0.15°C.

Heating the thermocouples with air and $CO_2$
V-TP $CO_2$ (mV)
V-TP Air (mV)
y = 1.0065x - 0.8498

Figure 10. The thermopile shows only a slight extra heating with $CO_2$ instead of air in the front chamber.

Al-plate heating with air and CO2
T-front-air
T-front-CO2
T-Rear-air
T-Rear-CO2
Temperature (°C)
Time (min)

Figure 5. Heating of the two chambers is nearly identical with the front chamber filled with close to 100% $CO_2$ or air (with ca 400 ppm $CO_2$). Average values from five measurements are shown.

3.3. Experiment with Argon

Argon is an inert gas that does not absorb IR radiation. When air was replaced by Argon in the front chamber the concentration of $CO_2$ in the chamber was reduced from 660 to about 200 ppm, but the heating curves for air and Argon were still close to identical (see Figure 8). The IR output through the front window was the same for both air and Argon in the front chamber, as expected.

The Argon experiment was also repeated when the Al-plate was replaced with the Al-foil. The heating curves (mean of two experiments) again showed near-identical results.

The results of our study show the near-identical heating curves when we change from air to 100% $CO_2$ or to Argon gas with low $CO_2$ concentration. Nevertheless, we observed absorption of IR radiation in the front chamber. We also observed the increased radiation density in the rear chamber due to the backscatter from $CO_2$. The change in observed backscatter radiation should give us a measurable temperature increase of 2.4 to 4 K by using the Stefan Boltzmann law. But we only observe a very slight temperature increase due to $CO_2$ backscatter. This indicates that heating, due to IR backscatter from $CO_2$, is much less than what is assumed from the Stefan Boltzmann law or from the forcing Equation (1a) and Equation (1b). The near-identical heating curves for all the three gases indicate that the thermal energy transfer is only driven by the temperature of the back wall of the rear chamber. Without extra heating of the walls in the rear chamber, the air temperature cannot increase. These findings might question the fundament of the forcing laws used by the IPCC. Another possibility is that our setup has unexplained heat losses that cancel the effect of the increased backscatter IR and prevent higher temperatures in the rear chamber, but after testing this and finding only slight losses, we do not see that this could be the case.

Source: Seim and Olsen, 2020

[Anmerkung: Auch im original ist diese Darstellung so undeutlich. Man sollte auf den Link klicken. A. d. Übers.]

**Grundlegende Punkte aus der Studie von Seim and Olsen 2020:**

- Die Vorstellung, dass die Rückstreuung von $CO_2$ der Haupttreiber der globalen Temperaturen ist, könnte falsch sein.

- Die Temperatur in einem Gefäß mit 100% $CO_2$ stieg leicht an, etwa um 0,5% [zusätzliche 0,15°C für einen von 20°C auf 50°C erhitzten Behälter].

- Wir beobachten keinen signifikanten Unterschied in den beiden Kurven durch die Erhöhung der CO2-Konzentration von ca. 400 ppm auf etwa 100% in der Vorkammer.

- Die Ergebnisse unserer Studie zeigen die nahezu identischen

Erwärmungskurven, wenn wir von Luft [$N_2$, $O_2$] zu 100% $CO_2$ oder zu Argon-Gas mit niedriger $CO_2$-Konzentration wechseln.

- Die Erwärmung der Al-Platte wurde ebenfalls gemessen, aber es wurde keine zusätzliche Erwärmung durch das Einfüllen von $CO_2$ in die vordere Kammer festgestellt.

- Diese Ergebnisse könnten die Grundlage der vom IPCC verwendeten Forcing-Gesetze in Frage stellen.

Link:
https://notrickszone.com/2021/04/01/physicists-lab-experiment-shows-a-co2-increase-from-0-04-to-100-leads-to-no-observable-warming/

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