NO EXPERIMENTAL EVIDENCE FOR THE SIGNIFICANT ANTHROPOGENIC CLIMATE CHANGE

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ABSTRACT. In this paper we will prove that GCM-models used in IPCC report AR5 fail to calculate the influences of the low cloud cover changes on the global temperature. That is why those models give a very small natural temperature change leaving a very large change for the contribution of the green house gases in the observed temperature. This is the reason why IPCC has to use a very large sensitivity to compensate a too small natural component. Further they have to leave out the strong negative feedback due to the clouds in order to magnify the sensitivity. In addition, this paper proves that the changes in the low cloud cover fraction practically control the global temperature.

1. INTRODUCTION

The climate sensitivity has an extremely large uncertainty in the scientific literature. The smallest values estimated are very close to zero while the highest ones are even 9 degrees Celsius for a doubling of CO$_2$. The majority of the papers are using theoretical general circulation models (GCM) for the estimation. These models give very big sensitivities with a very large uncertainty range. Typically sensitivity values are between 2–5 degrees. IPCC uses these papers to estimate the global temperature anomalies and the climate sensitivity. However, there are a lot of papers, where sensitivities lower than one degree are estimated without using GCM. The basic problem is still a missing experimental evidence of the climate sensitivity. One of the authors (JK) worked as an expert reviewer of IPCC AR5 report. One of his comments concerned the missing experimental evidence for the very large sensitivity presented in the report [1]. As a response to the comment IPCC claims that an observational evidence exists for example in Technical Summary of the report. In this paper we will study the case carefully.

2. LOW CLOUD COVER CONTROLS PRACTICALLY THE GLOBAL TEMPERATURE

The basic task is to divide the observed global temperature anomaly into two parts: the natural component and the part due to the green house gases. In order to study the response we have to re-present Figure TS.12 from Technical Summary of IPCC AR5 report (1). This figure is Figure 1. Here we highlight the subfigure “Land and ocean surface” in Figure [1]. Only the black curve is an observed temperature anomaly in that figure. The red and blue envelopes are computed using climate models. We do not consider computational results as experimental evidence. Especially the results obtained by climate models are questionable because the results are conflicting with each other.
In Figure 2 we see the observed global temperature anomaly (red) and global low cloud cover changes (blue). These experimental observations indicate that 1% increase of the low cloud cover fraction decreases the temperature by 0.11°C. This number is in very good agreement with the theory given in the papers [3, 2, 4]. Using this result we are able to present the natural temperature anomaly by multiplying the changes of the low cloud cover by −0.11°C/%. This natural contribution (blue) is shown in Figure 3 superimposed on the observed temperature anomaly (red). As we can see there is no room for the contribution of greenhouse gases i.e. anthropogenic forcing within this experimental accuracy. Even though the monthly temperature anomaly is very noisy it is easy to notice a couple of decreasing periods in the increasing trend of the temperature. This behavior cannot be explained by the monotonically increasing concentration of CO₂ and it seems to be far beyond the accuracy of the climate models.
The red curve in Figures 2 and 3 corresponds to the black curve, between years 1983 and 2008, in the above-mentioned subfigure “Land and ocean surface”. If the clouds and CO\textsubscript{2} were taken into account correctly in the climate models both the blue and red envelopes should overlap the observed black curve. As we see the trend of the blue envelope is more like decreasing. We suggest this is due to a wrong or missing processing of the low cloud cover contribution. In the report AR5 it is even recognized that the low clouds give the largest uncertainty in computation. In spite of this IPCC still assumes that the difference between the blue and red envelopes in Figure 1 is the contribution of greenhouse gases.

Unfortunately, the time interval (1983–2008) in Fig 2 is limited to 25 years because of the lack of the low cloud cover data. During this time period the CO\textsubscript{2} concentration increased from 343 ppm to 386 ppm and both Figures 1 (IPCC) and 2 show the observed temperature increase of about 0.4°C. The actual global temperature change, when the concentration of CO\textsubscript{2} raises from \( C_0 \) to \( C \), is

\[
\Delta T = \frac{\Delta T_{2CO_2} \ln C/C_0}{\ln 2} - 11^\circ C \cdot \Delta c,
\]

where \( \Delta T_{2CO_2} \) is the global temperature change, when the CO\textsubscript{2} concentration is doubled and \( \Delta c \) is the change of the low cloud cover fraction. The first and second term are the contributions of CO\textsubscript{2} and the low clouds, respectively. Using
Figure 3. Global natural temperature anomaly (blue) superimposed on the observed (red) temperature anomaly. The blue anomaly is derived using the observed low cloud cover data from Figure 2. There are half a dozen very sharp ghost spikes in the observed (red) temperature anomaly. The Pinatubo eruption and the strong El Niño are clearly seen.

Figure 4 shows the sum of the temperature changes due to the natural and \( \text{CO}_2 \) contributions compared with the observed temperature anomaly. The natural component has been calculated using the changes of the relative humidity. Now we see that the natural forcing does not explain fully the observed temperature anomaly. So we have to add the contribution of \( \text{CO}_2 \) (green line), because the time
interval is now 40 years (1970–2010). The concentration of CO\textsubscript{2} has now increased from 326 ppm to 389 ppm. The green line has been calculated using the sensitivity 0.24°C, which seems to be correct. In Fig. 4 we see clearly how well a change in the relative humidity can model the strong temperature minimum around the year 1975. This is impossible to interpret by CO\textsubscript{2} concentration.

The IPCC climate sensitivity is about one order of magnitude too high, because a strong negative feedback of the clouds is missing in climate models. If we pay attention to the fact that only a small part of the increased CO\textsubscript{2} concentration is anthropogenic, we have to recognize that the anthropogenic climate change does not exist in practice. The major part of the extra CO\textsubscript{2} is emitted from oceans \cite{6}, according to Henry’s law. The low clouds practically control the global average temperature. During the last hundred years the temperature is increased about 0.1°C because of CO\textsubscript{2}. The human contribution was about 0.01°C.

3. Conclusion

We have proven that the GCM-models used in IPCC report AR5 cannot compute correctly the natural component included in the observed global temperature. The reason is that the models fail to derive the influences of low cloud cover fraction on the global temperature. A too small natural component results in a too large portion for the contribution of the greenhouse gases like carbon dioxide. That is why
IPCC represents the climate sensitivity more than one order of magnitude larger than our sensitivity 0.24°C. Because the anthropogenic portion in the increased CO₂ is less than 10%, we have practically no anthropogenic climate change. The low clouds control mainly the global temperature.

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