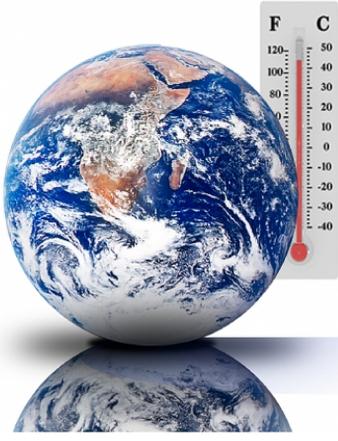


« [The Kauppinen papers \(1/2\)](#)

[Radon washout: two consecutive precipitation peaks](#) »

The Kauppinen papers (2/2)



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3. The four Kauppinen papers.

In the first part of these comments I finished by writing that Dr. Jyrki Kauppinen (et al.) has published during the last decade several papers on the problem of finding the climate sensitivity. Here is a list of these papers:

- » 2011 : Major portions in climate change: physical approach. (*International Review of Physics*) [link](#)
- » 2014: Influence of relative humidity and clouds on the global mean surface temperature (*Energy & Environment*). [Link to abstract](#). [Link to jstor read-only version](#) (download is paywalled).
- » 2018: Major feedback factors and effects of the cloud cover and the relative humidity on the climate. [Link](#).
- » 2019: No experimental evidence for the significant anthropogenic climate change. [Link](#).

The last two papers are on arXiv and are not peer reviewed, not an argument to refute them in my opinion.

4. Trying to render the essentials without mathematics.

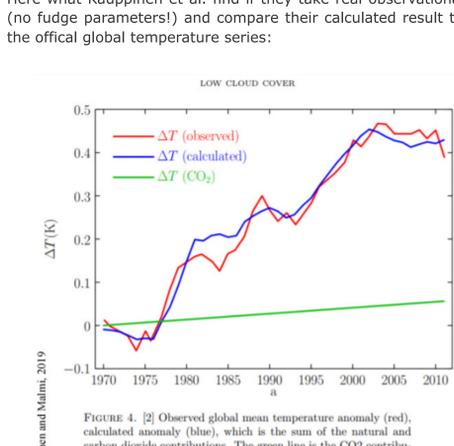
All these papers are, at least for big parts, heavy on mathematics, even if parts thereof are not too difficult to grasp. Let me try to summarize in lay man's words (if possible):

The authors remember that the IPCC models trying to deliver an estimate for ECS or TCR usually take the relative humidity of the atmosphere as constant, and practically restrict to allowing one major cause leading to a global temperature change: **the change of the radiative forcing Q**. Many factors can change Q, but overall the IPCC estimates the human caused emission of greenhouse gases and the land usage changes (like deforestation) are the principal causes of a changing Q. If the climate sensitivity is called R, the IPCC assumes that $\Delta T = R \cdot \Delta Q$ (here "D" is taken as the greek capital "delta"). This assumption leads to a **positive** water vapour feedback factor and so to the high values of R.

Kauppinen et al. disagree: They write that one has to include in the expression of ΔT the changes of the atmospheric water mass (which may show up in changes of the relative humidity and/or low cloud cover. Putting this into an equation leads to the conclusion that the water vapour feedback is **negative** and as a consequence that climate sensitivity is much lower.

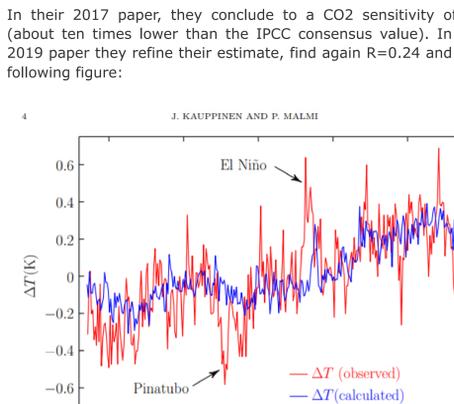
Let us insist that the authors do not write that increasing CO2 concentrations do not have any influence on global temperature. They have, but it is many times smaller than the influence of the hydrological cycle.

Here what Kauppinen et al. find if they take real observational values (no fudge parameters!) and compare their calculated result to one of the official global temperature series:



The visual correlation is quite good: the changes in low cloud cover explain almost completely the warming of the last 40 years!

In their 2017 paper, they conclude to a CO2 sensitivity of 0.24°C (about ten times lower than the IPCC consensus value). In the last 2019 paper they refine their estimate, find again $R=0.24$ and give the following figure:



Clearly the results are quite satisfactory, and show also clearly that their simple model can not render the spikes caused by volcanic or El Nino activity, as these natural disturbances are not included in their balance.

The authors conclude that the IPCC models can not give a "correct" value for the climate sensitivity, as they practically ignore (at least until AR5) the influence of low cloud cover. Their finding is politically explosive in the sense that there is no need for a precipitous decarbonization (even if on the longer run a reduction in carbon intensity in many activities might be recommendable).

5. My opinion

As written in part 1, Kauppinen et al. are not the first to conclude to a much lower climate sensitivity as the IPCC and its derived policies do. Many papers, even if based on different assumptions and methods come to a similar conclusion i.e. the IPCC models give values that are (much) too high. Kauppinen et al. also show that the hydrological cycle can not be ignored, and that the influence of low clouds cover (possibly modulated by solar activity) should not be ignored.

What makes their papers so interesting is that they rely only on practically 2 observational factors and are not forced to introduce various fudge parameters.

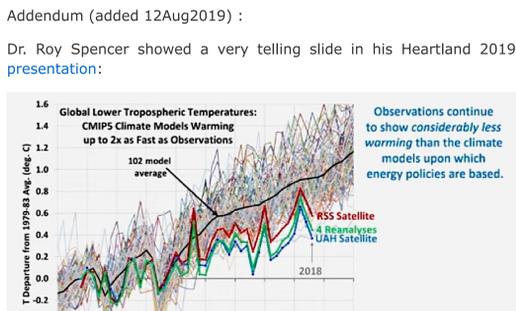
The whole problem is a complicated one, and rushing into ill-reflected and painful policies should be avoided before we have a much clearer picture.

The author **Alberto Zaragoza Comendador** has a very interesting web-site with an interactive climate-sensitivity calculator: azcomendador.shinyapps.io/Clisense

I really recommend to spend some time trying his calculations and especially reading his very interesting article "It shouldn't take 100 years to estimate the climate sensitivity".

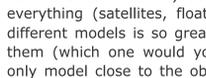
Addendum (added 12Aug2019) :

Dr. Roy Spencer showed a very telling slide in his Heartland 2019 [presentation](#):



This image shows the troposphere (not surface) warming as predicted by the CMIP5 models (which form the basis of all the "consensus" political action) versus the observations made by the satellites (by the RSS and UAH teams) and 4 different reanalysis which included everything (satellites, floats, balloons ...). The spread between the different models is so great as to forbid any action based on any of them (which one would you choose as the "truth"?). Curiously the only model close to the observations is the Russian INM-CM5 model (read a more complete discussion on that model [here](#)).

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2 Responses to "The Kauppinen papers (2/2)"

H2O Reduces CO2 Climate Sensitivity | Science Matters Says:
August 12, 2019 at 16:14 | [Reply](#)

[...] Massen writes at his blog meteoLCD on The Kauppinen papers, summarizing and linking to studies by Dr Jyrki Kauppinen (Turku University in Finland) regarding [...]

Pethefin Says:
August 13, 2019 at 06:46 | [Reply](#)

Could you correct the last name of the Finnish lead writer of the papers? The correct last name is Kauppinen not Kaupinnen.

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