

Michael, you stated, "Other scientists point out the basic mistakes Salby makes."

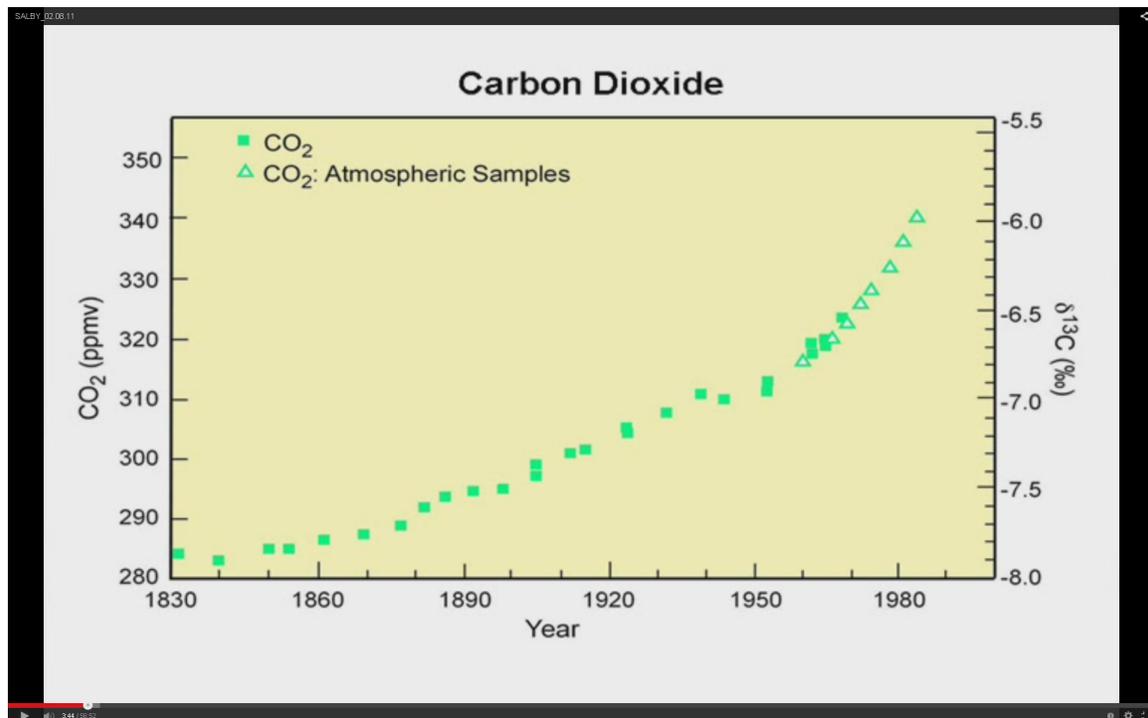
Really, what "other scientists" are you referring to? I can't seem to find a link to any.

From the Skeptical Science (SKS) post you linked to:

*"Professor Salby refers to a number of graphs in his talk, but I have been unable to track down copies of these, therefore we'll have to rely on **what I'm able to glean** from the podcast, and given it's length, I'll only address some of the more obvious mistakes. At the beginning of the talk Salby states: **"current CO2 values are 380ppmv"**(parts per million by volume)*

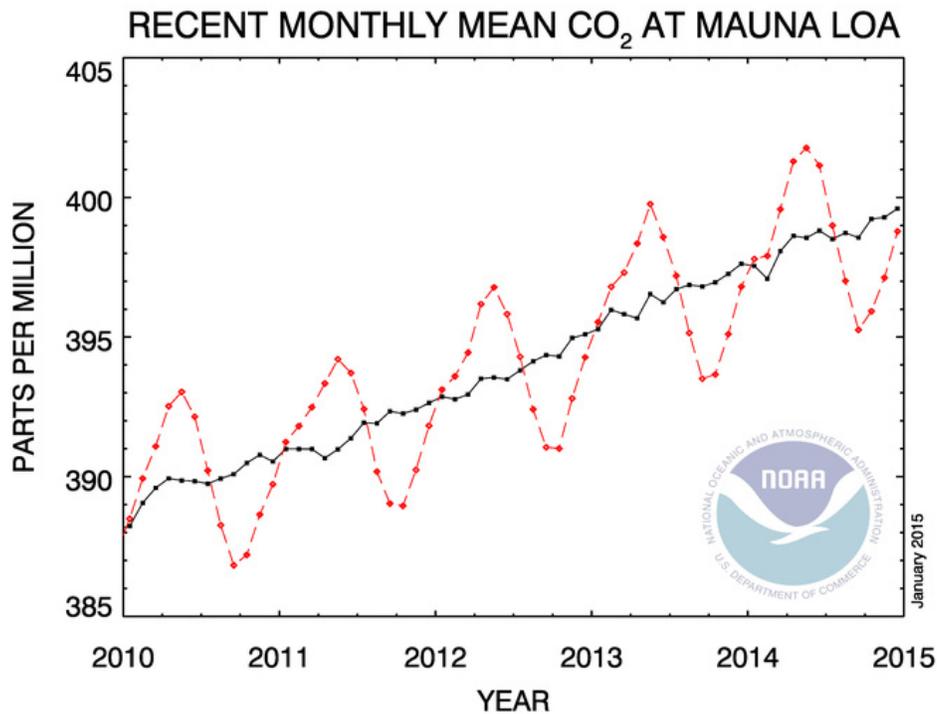
Not an encouraging start that he cites the atmospheric CO2 concentration as it was in 2005, rather than the 393 parts per million by volume (ppmv) it currently is in 2011. Not a fatal flaw of course, but not encouraging either."

What Salby actually stated in that particular lecture is this (just after referring to the graph below) – **"Current values are about 380 ppmv."** You will note the graph he was using for looking at the trending of CO from 1830 only shows increases through to about 1985, when CO2 was at about 340 ppmv....therefore, his **"about 380"** comment was a clear acknowledgement that CO2 had continued to rise since the 1980's to about 380 in 2011.



Below is a graph from NOAA showing actual values of CO2 in 2011. As you can see, the range of CO2 in 2011 was from a low of 387 to a high of 394.

My point is that when someone uses the word "about" with reference to a level, and certainly in the context of this lecture, it becomes meaningless as an argument against a person's academic credentials. And, in the context of the lecture the comment was meaningless.



The SKS article goes on to say - *"I think the single biggest nail in this whole coffin is that human emissions have extracted 337 Gt of carbon from the ground and turned it into CO₂. So any "natural source" argument must both (a) come up with a comparable source of carbon (which would be utterly huge, and unheard of in the past 800,000 years where atmospheric levels have never topped 300 ppm) and (b) a sink to absorb and completely hide the human emissions.*

Let's deal with (a) first.

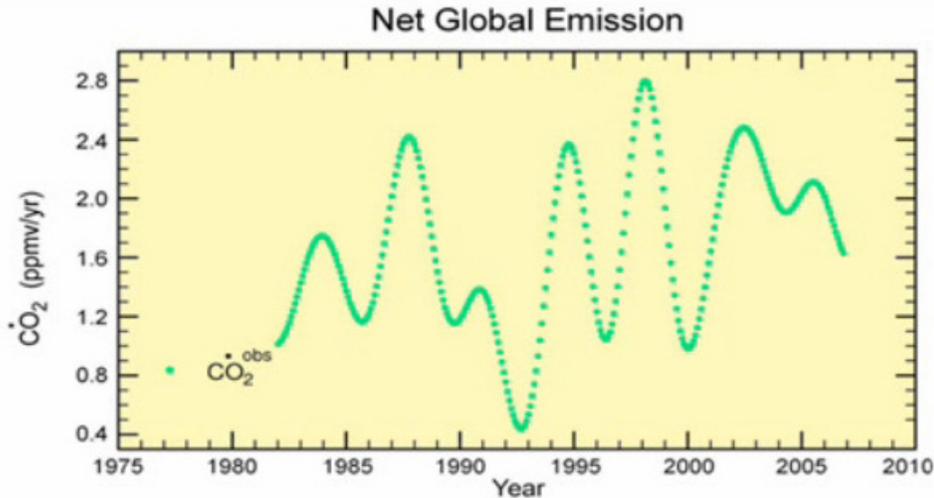
I take it the 337 Gt of CO₂ is a reference to the amount of CO₂ estimated to have been contributed by man between 1751 and 2010. (source Boden, T.A., G. Marland, and R.J. Andres. 2010. Global, Regional, and National Fossil-Fuel CO₂ Emissions. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn., U.S.A. doi 10.3334/CDIAC/00001_V2010 - http://cdiac.ornl.gov/trends/emis/tre_glob.html).

That's a period of 259 years.

337 divided by 259 years = 1.3 Gt per year. Given the annual, natural, CO₂ source/sink exchange is "about" 150 Gt/year, although this is only science's best estimate because of the limits of observation of natural sources and sinks.

Therefore, 1.3 Gt = <1% of the annual natural sources....hardly an "utterly huge" source.

In fact, **increases and decreases** of CO₂ in the atmosphere can vary as much as 700% from year to year. e.g. anywhere from 0.4 ppmv to 2.8 ppmv, due to the annual fluctuations from such natural events as volcanic eruptions, and El Nino or La Nina.



And yes, I acknowledge that manmade CO₂ emissions continue to increase on an annual basis, the SKS comment was specifically dealing with the 337 Gt figure, most of which has already been “sunk.”

Thus, while CO₂ continues to rise in the atmosphere, it is NOT rising smoothly, ala what would be expected if **only** man’s CO₂ contribution was causing the rise.

Clearly, the annual CO₂ fluctuation is therefore a function of natural forces.

Regarding the second part of (a) – “...unheard of in the past 800,000 years where atmospheric levels have never topped 300 ppm...” Salby uses atmospheric physics (which he is an acknowledged expert of) to show how the ice core proxy record underestimates CO₂ levels. I haven’t got time to delve into an explanation of the physics involved, but, you are welcome to view that part of the lecture anytime you so choose.

So, is there any indication in proxy records (other than ice cores) that CO₂ levels have often been above 300 ppmv?

Well, here’s a couple of dozen studies - <https://agwobserver.wordpress.com/2011/07/06/papers-on-atmospheric-co2-from-proxies/>

Now, onto (b) “...a sink to absorb and completely hide human emissions.”

The above graph indeed shows that natural sinks completely dwarf human emissions. In fact, human emissions would be lost in the error bars of approximating natural CO₂ sources and sinks.

“As well as some rationale which explains why the sink works on human emissions but not natural emissions, so that the atmospheric and ocean CO₂ increases are “entirely natural” while human emissions magically disappear into thin air and have no effect on anything. This, to me is complete and total denial in a nutshell.”

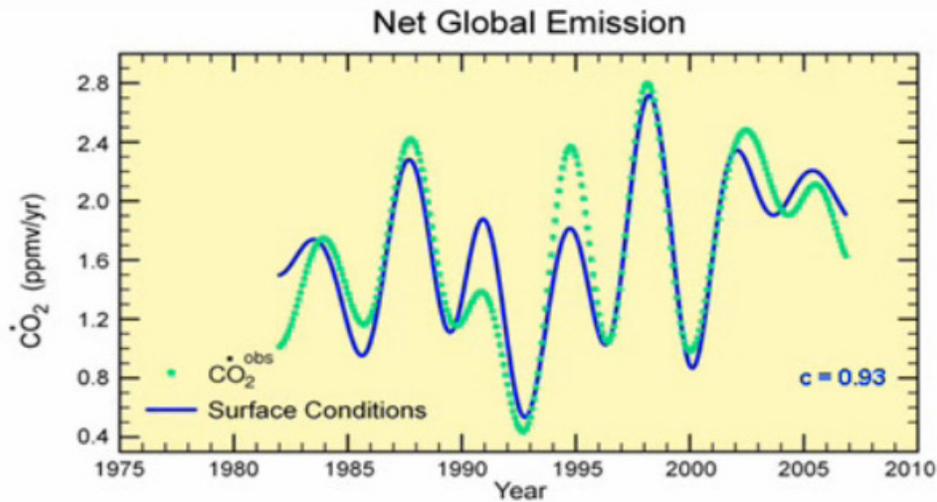
And here we have an indication of the ignorance of author when it comes to physics and nature.

If natural variation dwarfs manmade CO₂ emissions, as it apparently does, then no reduction in manmade CO₂ would make a significant difference to the overall trend of increasing CO₂.

“To make this sort of twisted, impossible, Alice-in-Wonderland argument work requires such a Lewis-Carrollian pretzel that it clearly demonstrates a mind in utter and complete denial of reality”

The “denial of reality” is the author’s, not Salby’s.

What the author completely ignores is Salby's presentation of data which shows the remarkable correlation between "surface conditions" (those natural sinks and sources observed by science) and net global emissions of CO₂, as per this graph.



That's a 93% correlation....one that is hard to ignore, and, makes the theoretical correlation between net global emission and manmade CO₂ increases look like a joke.

Lastly, for now, Salby makes a cohesive argument that temperature has always driven the natural CO₂ increases, which are reflected in the annual variations of CO₂ increases.

So Michael, when you ask me to rely upon the SKS's opinion on Salby, you can perhaps see why I have no respect for their shoddy "analysis."

Just like you, they chose not to watch the lecture, or understand the complexities, but, were eager to try and cherry pick out an argument and condemn the science, without taking the time to try and understand what was being stated.

Once again, I challenge you to watch the lecture, and come back at me with an argument, based in science, that demolishes Salby's.