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A weblog on climate, global change and climate measurements

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The solar influence on climate

1. The “Consensus Science” ignores or belittles the solar influence.

A furious debate is going on since many, many years on the influence of solar variations on global and regional climate. We all know that solar irradiance varies periodically in 11 years, its magnetic field in 22 years, and that many other periodic variations can be found (for instance the Suess cycle of 211 years , the millennium cycle explaining the Minoan, Roman and Medieval warm periods, and the very long Milankovitch cycles which rhythm the great ice ages).

The total irradiance = the power sent by the sun to the earth little over one cycle, about 1 W/m2 (at the top of the atmosphere perpendicular to the rays) from maximum to minimum. This must be compared to the ~1366 W/m2 mean irradiance. The “consensus” climatologists and the IPCC insist that this is too little to explain for instance the 0.8°C warming observed during the last 100 years, and is completely swamped by the radiative forcing of our greenhouse gas emissions (estimated at ~2 W/m2 for CO2 alone when the year 1750 is taken as zero). What this consensus-science ignores is that the UV irradiance during a solar cycle varies much more, and has many indirect and possible amplified consequences due to ozone heating and influence on the great oceanic oscillations (see [here](#)).

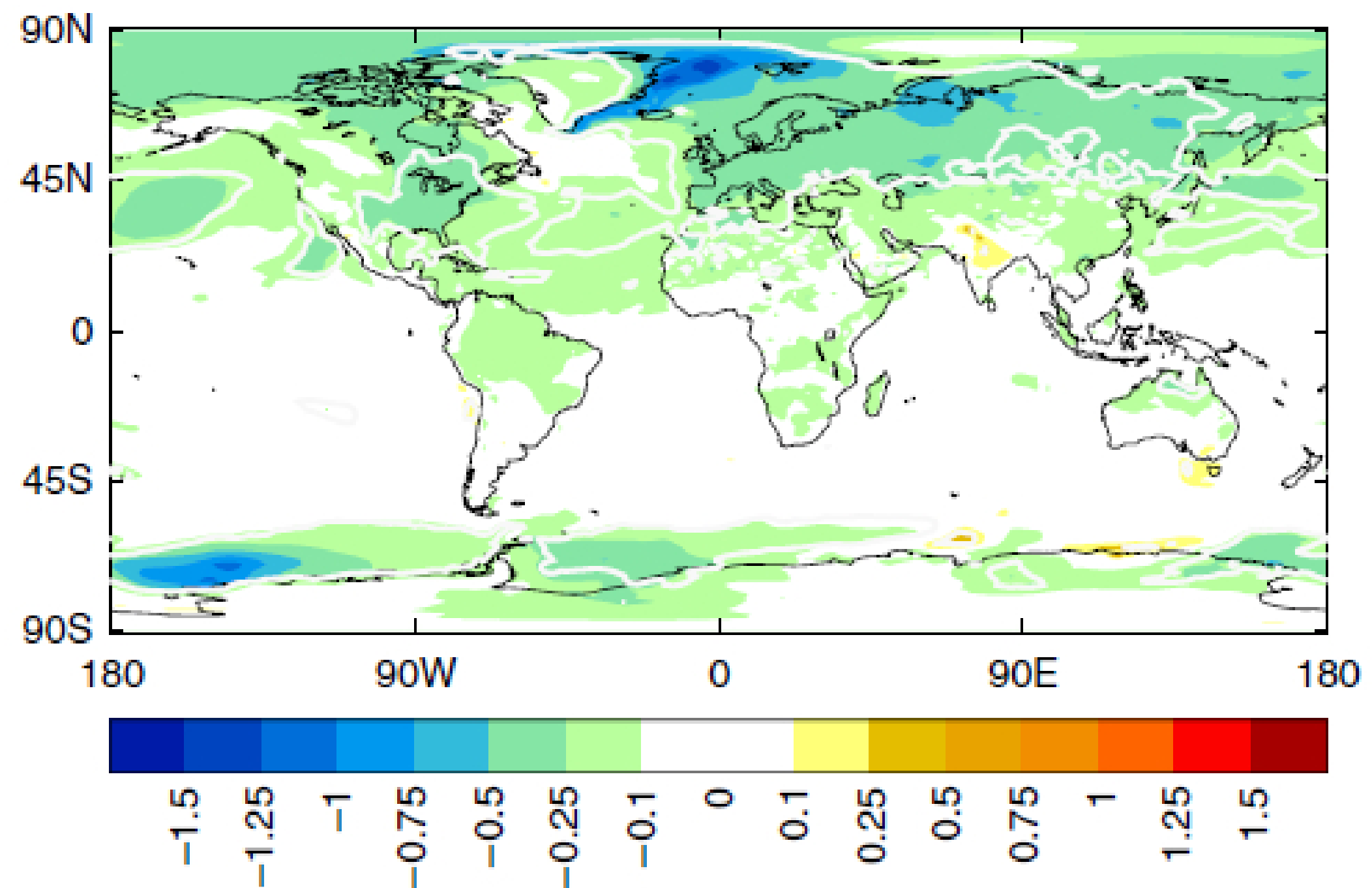
Also ignored are what we know from history: periods of low solar activity (as the Maunder minimum during the first part of the 17th century, or the Dalton minimum around 1820) were much colder (by 0.4 to 0.2 °C) and are described by historians as periods of famine and social unrest due to bad agriculture productivity.

2. The new Ineson et al. paper

Sarah Ineson et al. have published the 23th June 2015 an interesting paper titled “**Regional climate impacts of a possible future grand solar minimum**” (Nature communications, [open access](#)). This paper is interesting not for the usage of climate models (we all know how unreliable these can be), but for the steps made in acknowledging what climate realists have said since many years:

- the actual decline in solar activity is faster than any other such decline in the past 9300 years
- this decline may lead to Maunder Minimum-like conditions with a probability of up to 20%
- recent satellite data show that the variability of UV irradiance could be considerably larger than given by previous estimates

Their modeling exercise (EXPT-B) suggests a regional winter-time cooling for Northern Europe and East-USA of about 0.4 °C



This figure of the annual mean temperatures shows the solar induced cooling that touches nearly every part of the globe (under the hypothesis that the ongoing quiet solar situation will have the same effects as it had during the Maunder minimum).

This cooling could begin to start around 2030 and continue up to 2100 ! If you think at the coming Paris COP in December 2015 where all countries will be coaxed into binding warming lowering policies, this new paper should make ripples in the naive enthusiasm of the anti-warming advocates.

Could it be that our rising CO2 emissions, besides their positive influence on plant productivity and [planetary greening](#), will be our best insurance against a fall back into a Little Ice Age?

Read also these [contributions](#) in Climate Dialogue about what will happen during a new Maunder Minimum.

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