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A CO2 - temperature equation

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Abstract. Modelling climate change at its core equation - temperature against CO2 concentration may allow a projection of the future path of global warming. The conclusion is certain: considerably hotter.
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JEL. B14, B24, B51.

1. Introduction

Climate change AFFIRMERS warn of the nefaste effects of global warming. Climate change DENYERS ridicule this. Global opinion seems to swing in favour of the former now but most government dirty support the latter.

2. A central qustion

One would like to know when the outcomes of global warming become truly horrific. If it is the case that climate change is unstoppable (Hawking irreversibility), then when will this be undeniably visible? Several ecological disasters occur new weekly around the globe. Are they due to rising temperatures? Ecologists speak of a gigantic crisis for Planet Earth with the extinction of many species, True? Gould głobal warming be indirectly the cause of many disasters?

3. A tentative model

The yearly rises in average global temperature are well documented. Diagram 1 has the overall picture for more than one hundred Years, starting from 1880, set as 0. What could account for these ups and downs? Following the discovery or scientific revolution by S. Schneider, we try the amount of CO2 emissions yearly. Thus, we have:

x=atmosphere concentration CO2 in ppm

y= change in global surface temperature relative to 1951-1980 average temperatures

Regression line: y = -3,4277 + 0,0106x

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Increase by 1 ppm CO2 leads to increase in global temperature 0,01 degrees CO2 concentration has grown from 315 to 410 so temperature has risen with c:a 1 degree as figure shows.

R-squared = 0.913. A spurious correlation? Self-evident? No. Probably not, as it reflects the rising dependence on energy from fossil fuels. The fossil fuels are in much demand, because they offer cheap energy which is vital for affluence.

Is the planet already at its Hawking irreversibility? The notion of irreversible transformation is very menacing, as policy could only slow down the arrival of a global disaster.

There is a way to find out about irreversibility, namely to consult the global thermometer CO2 daily: 28/12 at 412 ppm and 408 one year ago (CO2).

Following the logic of the model on (1), one cannot but arrive at a sinister future for mankind. At levels of CO2 over 450 ppm the negative outcomes of global warming will be much stronger. The best way to counteract is simply to close all coal plants right now.

4. Conclusion

By modelling energy use, CO2 concentration and temperature rise, one can predict when Planet Earth breaks through the Paris Accord of 1.5 degrees or worse plus 2 degrees. We may be on the road to perdition.