

Interactive comment on “Continuous and self-consistent CO₂ and climate records over the past 20 Myrs” by R. S. W. van de Wal et al.

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I find the results of this paper to be incredible. When the CO₂ concentration in the atmosphere goes from 278 ppm to 390 ppm, $\ln(\text{CO}_2/\text{CO}_2\text{-ref})$ is 0.338. According to Figure 5, for this change in CO₂, the change in NH temperature is 14.8 degrees Celsius. If that were the case, the world should be sweltering today. Furthermore, if CO₂ doubled to 556 ppm, Figure 5 would say that NH temperature would rise by 27.5°C. The slope of the line in Figure 5 is much too high. The forcings due to various levels of CO₂ were estimated by Hansen and Sato (2011) and they are illustrated in my figure attached. While the temperature changes resulting from these forcings remains debatable, there is no way that such changes in CO₂ can produce gigantic temperature changes. Current estimates of the temperature change due to doubling of CO₂ from

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278 ppm to 556 ppm are around 1.2°C without feedbacks.

Hansen, J. and Makiko Sato (2011) “Paleoclimate Implications for Human-Made Climate Change” http://www.columbia.edu/~jeh1/mailings/2011/201110118_MilankovicPaper.pdf

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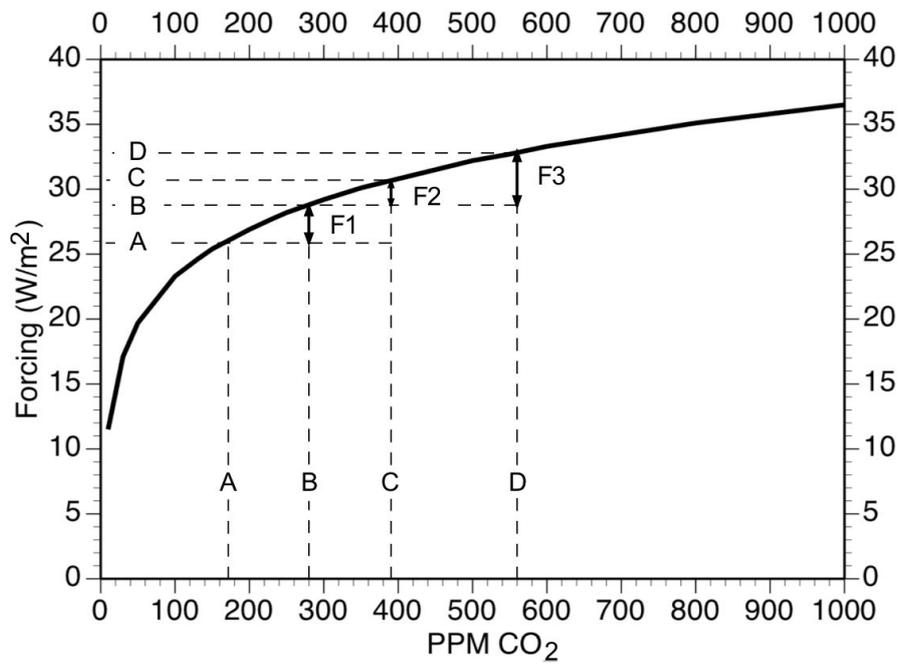


Fig. 1. Forcings due to various levels of CO₂ (Hansen and Sato, 2011)