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Interactive comment on "Economic impacts of a glacial period: a thought experiment. Assessing the disconnect between econometrics and climate sciences" *by* Marie-Noëlle Woillez et al.

Anonymous Referee #1

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This is a peculiar paper.

The authors take two functions for the economic impact of weather and pretend that these represent the economic impact of climate change. One of these functions is unpublished, the other is known to be wrong.

The authors estimate these functions for a period of modest warming and extrapolate to a scenario with large cooling. They pay little attention to specification and confidence intervals.

The authors refer to but do not use the functions of the economic impact of climate change. They ignore the one study of the economic impact of cooling by Ralph d'Arge.

They do not compare their results to previous estimate of the impact of a shutdown of the thermohaline circulation, the scenario that comes closest to the one considered here.

I recommend a major revision because the idea is nice, but major revision here means replace the paper.

Equation (1) is wrong. The left-hand side is stationary. Temperature on the right-hand side is non-stationary. This cannot be, but fortunately there are year dummies. You thus regress economic growth on the cointegrating vector of temperature and trend. The statistical properties of this are unknown, but results are biased because you measure the cointegrating vector with error. The procedure may work in sample, but you cannot extrapolate without estimating the year dummies for future years. Burke set future dummies to zero, which is really quite a stupid thing to do.

Interactive comment on Earth Syst. Dynam. Discuss., https://doi.org/10.5194/esd-2020-28, 2020.