Tutorial 2 – Environmental economics

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This exercise is based on Dell, Jones, and Olken's paper titled "Temperature Shocks and Economic Growth: Evidence from the Last Half Century" (2012, *AEJ Macro*). The paper is available here.

1. What is the research question of this paper?
2. What is the novelty in their approach compared to previous papers that investigated the same research question?
3. Briefly describe the dataset.
4. Explain how the authors computed average annual temperatures at the country level.
5. From equations (1) and (2), show how we obtain equation (3). Discuss the effect of temperature on long-run GDP in this model.
6. Download the dataset climate_panel.dta and the file dell_et_al_tutorial.do. Run the first 50 lines of code.
7. On a graph, plot countries' log GDP in 2000 (vertical axis) as a function of their average temperature in 2000 (horizontal axis).
8. Run a simple OLS regression for the previous relationship and discuss the result. Why can't we interpret it as a reliable estimate of the effect of temperature on GDP?
9. Replicate the graph and OLS regression of questions 6 and 7 using average precipitations instead of average temperatures. What do you conclude from these results?
10. Run the data preparation (i.e. from line 64 to line 212).
11. Using the Stata command *xtreg*, and clustering at the country level, run the regression corresponding to the first column of Table II. What do you conclude about the effect of temperature on growth?
12. Run the regression corresponding to the second column of Table II. What do you conclude about the heterogeneous effects of temperature on growth?
13. Run the regression corresponding to the third column of Table II. What do you conclude about the effect of precipitations on growth?
14. Run the regressions corresponding to the first four columns of Table III. What do you conclude about the persistence of the effect of temperature on growth?