Homework 2

Environmental Economics II
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In this assignment, we are given imaginary data on an energy-efficiency retrofit program in Atlanta. The research hypothesis is whether the program reduced energy use. The experiment done in such way that after recruiting the households for the program, we assigned them to treatment and control groups. Treatment homes received the retrofits on the first of the month and control homes did not have any work done.

1. Suppose that for for a home i, the underlying relationship between electricity use and predictor variable is given by

$$y_i = e^\alpha \delta^{d_i} z_i^\gamma e^{\eta_i}$$

   where y_i is the electricity use, e is Euler's number or the base of the natural logarithm, d_i is a binary variable equal to one if home i received the retrofit program, z_i is a vector of the other control variables, and η_i is unobserved error, and $\{\alpha, \delta, \gamma\}$ are the parameter to estimates.

   (a)