Assignment 3
An Intense Course in Data Analysis Using MultiLevel Regression Models
Peking University Summer School, 2010

Choose two states from the radon data.

1. Fit a fixed effects model with floor and building for each of the states. How do those estimates compare to those for MO?

2. Fit a fixed effects model using the data on both states with state as another fixed effect predictor, and compare to the model in the previous question. Why would we not want to use state as a random effect with only two states in the data?

3. Fit a random effects model with county as a random effect to each state separately. How did the fixed effects estimates change? Show whether you need to include county as a random effect. Try wave too, if you have time.

4. What is the formula for a model with county nested in state when state is a fixed effect? You may not have enough memory to fit that model using the 2 states you chose, but you can try. The worst is that your R session will end abruptly.

5. What would you do to show the uncertainty in the estimated effects for a random county? Try it if you have time.