Example 10-2

September 11, 2020

[ ]:
```
# install the following packages and libraries
install.packages("pder")
install.packages("plm")
install.packages("splm")

library(spData)
install.packages("spDataLarge")
library("pder")
library("plm")
library("splm")
```

[2]:
```
##---------------------------------Block 1--------------------------------

#### Example 10-2 ####

## ------------------------------------------------------------------------
data("usaw49", package="pder")
data("HousePricesUS", package="pder")

# create a data frame and run the Pesaran CD test for
# local cross-sectional dependence
php <- pdata.frame(HousePricesUS)
pcdtest(php$price, w = usaw49)
```

```
Pesaran CD test for local cross-sectional dependence in panels

data:  php$price
z = 37.288, p-value < 2.2e-16
alternative hypothesis: cross-sectional dependence
```

[3]:
```
##---------------------------------Block 2--------------------------------

# randomized W test for spatial correlation
rwtest(php$price, w = usaw49, replications = 999)
```

```
Randomized W test for spatial correlation of order 1
```

```
data:  formula
p-value = 0.002
alternative hypothesis: twosided
```

[4]:
```r
##---------------------------------Block 3---------------------------------

# MG and CCE models
mgmod <- pmg(log(price) ~ log(income), data = HousePricesUS)
ccemgmod <- pmg(log(price) ~ log(income), data = HousePricesUS, model = "cmg")

# Pesaran CD and randomized W tests
pcdtest(resid(ccemgmod), w = usaw49)
rwtest(resid(mgmod), w = usaw49, replications = 999)
```

```
Pesaran CD test for local cross-sectional dependence in panels

data:  resid(ccemgmod)
z = 28.217, p-value < 2.2e-16
alternative hypothesis: cross-sectional dependence


Randomized W test for spatial correlation of order 1

data:  formula
p-value = 0.002
alternative hypothesis: twosided
```