> summary(null.l)

Linear mixed-effects model fit by maximum likelihood

Data: qibr4

AIC BIC logLik

56369.41 56394.62 -28181.7

Random effects:

Formula: ~1 | land

(Intercept) Residual

StdDev: 0.5269717 0.5675265

Fixed effects: A ~ 1

Value Std.Error DF t-value p-value

(Intercept) 4.627912 0.1666901 33003 27.76357 0

Standardized Within-Group Residuals:

Min Q1 Med Q3 Max

-3.73796976 -0.70473522 0.04158976 0.73513602 3.30177730

Number of Observations: 33013

Number of Groups: 10

> summary(exp.l\_lr)

Linear mixed-effects model fit by maximum likelihood

Data: qibr4

AIC BIC logLik

8650.746 8684.365 -4321.373

Random effects:

Formula: ~1 | land

(Intercept) Residual

StdDev: 0.9250163 0.2755753

Correlation Structure: Exponential spatial correlation

Formula: ~x + y | land/road

Parameter estimate(s):

range

Inf

Fixed effects: A ~ 1

Value Std.Error DF t-value p-value

(Intercept) 4.600471 0.293039 33003 15.69918 0

Standardized Within-Group Residuals:

Min Q1 Med Q3 Max

-10.04189013 -2.03615864 0.06852904 1.81033953 7.75793616

Number of Observations: 33013

Number of Groups: 10

> summary(ibr4qA.lme)

Linear mixed-effects model fit by maximum likelihood

Data: qibr4

AIC BIC logLik

-38256.51 -38197.67 19135.25

Random effects:

Formula: ~1 | land

(Intercept) Residual

StdDev: 0.4691694 0.8563392

Correlation Structure: Exponential spatial correlation

Formula: ~x + y | land/road

Parameter estimate(s):

range

12.16465

Fixed effects: A ~ barr \* mort

Value Std.Error DF t-value p-value

(Intercept) 4.039357 0.15625790 33000 25.850575 0.0000

barr -0.304532 0.04898343 33000 -6.217042 0.0000

mort -0.069700 0.04896218 33000 -1.423540 0.1546

barr:mort 0.044142 0.04896261 33000 0.901543 0.3673

Correlation:

(Intr) barr mort

barr -0.001

mort -0.001 -0.001

barr:mort 0.000 -0.001 -0.004

Standardized Within-Group Residuals:

Min Q1 Med Q3 Max

-2.6617835 0.3631832 0.8142405 1.1943982 2.2658312

Number of Observations: 33013

Number of Groups: 10