> # partition data

> pick <- sample.int(size=2000, n=nrow(dataAK))

> data <- dataAK[pick,]

>

> # Analysis

> location <- data[,c('lng','lat')]

> Dist.km <- distm(location, fun=distGeo)/1000

> Dist <- Dist.km/max(Dist.km)

>

> # mod <- optimize\_GLS\_TI(meanNDVI ~ lat, data=data, V.meth="exponential", D=Dist, verbose=T, pars.start = c(r = .01, a = 1, nug = .15))

> # mod

>

> r.est <- max(Dist.km) \* mean(c(0.03308253, 0.03316746, 0.02512171, 0.03836761))

>

> data.file = system.file("dataAK.csv")

>

> parts = sample\_partitions(npix = nrow(dataAK), partsize = 2000)

[1] "calculating npart"

> mod.parts <- fitGLS.partition.mc(

+ part\_f = "part\_csv",

+ dist\_f = "dist\_km",

+ V.meth = "exponential",

+ spatcor = r.est,

+ part\_csv\_path = "dataAK.csv",

+ part\_mat = parts,

+ part\_form = "meanNDVI ~ lat",

+ part\_form0 = "meanNDVI ~ 1",

+ partsize = nrow(parts), npart = ncol(parts),

+ ncores = 4

+ )

[1] "1. setup"

[1] "2. part GLS"

[1] "3. cross-partition GLS"

[1] "4. Results Collection"

[1] "5. Output"

>

> cor\_chisq.test(mod.parts)

pval.chisqr

0.003656979

>

> cor\_t.test(mod.parts)

Est SE t.stat pval.t

(Intercept) 19.4580109 7.01938509 2.772039 5.574068e-03

lat -0.1894285 0.01851428 -10.231476 1.572692e-24

>

> source("remote\_sensing\_tools\_24May21.R")

>

> parts.list <- list(parts[,1])

> for(i in 2:ncol(parts)) parts.list[[i]] <- parts[,i]

>

> z <- GLS.partition.data(formula = "meanNDVI ~ lat", formula0 = "meanNDVI ~ 1", data = dataAK, spatial.autocor.FUN = "exponential", spatialcor = r.est, est.nugget = T, partition = parts.list, nugget.interval = c(0.0001, .9999), verbose = T)

> GLS.partition.pvalue(z, doFtest = F, nboot = 1e+05)

$p.chisq

[1] 0.003310424

$p.t

coef se tscore P

(Intercept) 19.4580109 4.06951858 4.781404 1.749013e-06

lat -0.1894285 0.06467209 -2.929060 3.402443e-03