require(jagsUI)

require(loo)

D=list(T=197,y=c(17.0,16.6,16.3,16.1,17.1,16.9,16.8,17.4,17.1,17.0,16.7,17.4,17.2,17.4,17.4,17.0,

17.3,17.2,17.4,16.8,17.1,17.4,17.4,17.5,17.4,17.6,17.4,17.3,17.0,17.8,17.5,18.1,17.5,17.4,17.4,

17.1,17.6,

17.7,17.4,17.8,17.6,17.5,16.5,17.8,17.3,17.3,17.1,17.4,16.9,17.3,17.6,16.9,16.7,16.8,16.8,17.2,16.8,

17.6,17.2,16.6,17.1,16.9,16.6,18.0,17.2,17.3,17.0,16.9,17.3,16.8,17.3,17.4,17.7,16.8,16.9,17.0,16.9,

17.0,16.6,16.7,16.8,16.7,16.4,16.5,16.4,16.6,16.5,16.7,16.4,16.4,16.2,16.4,16.3,16.4,17.0,16.9,17.1,

17.1,16.7,16.9,16.5,17.2,16.4,17.0,17.0,16.7,16.2,16.6,16.9,16.5,16.6,16.6,17.0,17.1,17.1,16.7,16.8,

16.3,16.6,16.8,16.9,17.1,16.8,17.0,17.2,17.3,17.2,17.3,17.2,17.2,17.5,16.9,16.9,16.9,17.0,16.5,16.7,

16.8,16.7,16.7,16.6,16.5,17.0,16.7,16.7,16.9,17.4,17.1,17.0,16.8,17.2,17.2,17.4,17.2,16.9,16.8,17.0,

17.4,17.2,17.2,17.1,17.1,17.1,17.4,17.2,16.9,16.9,17.0,16.7,16.9,17.3,17.8,17.8,17.6,17.5,17.0,16.9,

17.1,17.2,17.4,17.5,17.9,17.0,17.0,17.0,17.2,17.3,17.4,17.4,17.0,18.0,18.2,17.6,17.8,17.7,17.2,17.4))

**cat("**

model { for (t in 1:T) {y[t] ~ dnorm(mu[t],tau[S[t]])

LL[t] <- -0.92+0.5\*log(tau[S[t]])-0.5\*tau[S[t]]\*(y[t]-mu[t])\*(y[t]-mu[t])

mu[t] <- beta0+th[t];

S[t] ~ dcat(pi[1:3])}

for (t in 2:T) {th[t] ~ dnorm(m.th[t],tau.th)

m.th[t] <- phi\*th[t-1]}

th[1] <- 0

beta0 ~ dnorm(0,0.00001)

tau.th <- tau[1]/q

# measurement error variance and prior probability options

tau[1] ~ dgamma(1,0.001)

tau[2] <- tau[1]/10

tau[3] <- tau[1]/32

r ~ dexp(9);

pi[1] <- 1/(1+r)

pi[2] <- 0.5\*r/(1+r)

pi[3] <- 0.5\*r/(1+r)

# other priors

q ~ dexp(1)

phi ~ dunif(-1,1)

sig2[1] <- 1/tau[1]

sig2[2] <- 1/tau.th}

", file="model1.jag")

inits1 <- list(q=1,tau=c(1,NA,NA),beta0=17,r=0.1,phi=0.8)

inits2 <- list(q=1,tau=c(50,NA,NA),beta0=17,r=0.05,phi=0.9)

inits=list(inits1,inits2)

pars <- c("sig2","pi","LL")

R <- autojags(D, inits, pars,model.file="model1.jag",2,iter.increment=5000, n.burnin=500,Rhat.limit=1.1, max.iter=100000, seed=1234)

R$summary