WinBUGS code for the univariate spatial stick-breaking model

Below is the WinBUGS code for the univariate spatial stick-breaking prior with finite m. The inputs to this program include the outcome vector y and vectors spatial coordinates s_1 and s_2.

```
model{
 for(i in 1:n){
   y[i]~ dnorm(mu[i],taue)
   mu[i]< −int+theta[g[i]]
   g[i] ~ dcat(p[i,])
 }
  int ~ dnorm(0,0.01)
  taue ~ dgamma(0.01,0.01)
  for(j in 1:m){theta[j] ~ dnorm(0,taus)}
  taus~ dgamma(0.01,0.01)
  for(i in 1:n){
   p[i,1]< −uin[i,1]
   for(j in 2:m)p[i,j]< −uin[i,j]*prod(uout[i,1:(j-1)])}
  }
  for(j in 1:(m-1)){
   v[j] ~ dbeta(a,b)
   knot1[j] ~ dunif(min1,max1)
   knot2[j] ~ dunif(min2,max2)
   invbw[j] ~ dgamma(1.5,lambda)
   for(i in 1:n){
    uin[i,j]< −exp(-.5*invbw[j]*(pow(knot1[j]-s1[i],2) + pow(knot2[j]-s2[i],2)))*v[j]
    uout[i,j]< −1-uin[i,j]
   }
  }
  for(i in 1:n){uin[i,m]< −1}
  lambda ~ dunif(0,lmax)
  a~dunif(amin,amax)
  b~dunif(bmin,bmax)
}
```