

```
c      +-----+
c      + subroutine : bh matrix                      +
c      +-----+
subroutine bhm(idim,jdim,nana,bh,latana,lonana,
+      latm,lonm,dlat,dlon,clat,sdevfg,gscale)
implicit none
integer idim,jdim,nana
real latm,lonm,dlat,dlon,clat,sdevfg,gscale
real bh(idim*jdim,nana),latana(nana),lonana(nana)

integer k,l,ki,kj
real klat,klon,llat,llon,clon,cov,varian,dis2
real pi

pi = asin(1.)*2.

clon = clat*cos(latm*pi/180.)
varian = sdevfg*sdevfg

c      diagonal elements modification, due to binv

      do k=1,idim*jdim
kj = k/idim
if(mod(k,idim).ne.0) kj=kj+1
ki = k -(kj-1)*idim
klat = latm + (kj-(jdim/2+1))*dlat
klon = lonm + (ki-(idim/2+1))*dlon
      do l=1,nana
dis2 = ( ((klat-latana(l))*clat)**2+
+      ((klon-lonana(l))*clon)**2 )
+      / gscale**2
bh(k,l) = varian*exp( -dis2 )
enddo
enddo
end
```