

v1.2 Mar.2016

Multi mode cavity
Thick body
Door choke wide

subroutine lattice_time_2dtm

```
!***** lattice widths *****  
dl=2.0d-3  
dy=dl  
dz=dl  
!***** number of cells in pml (ncpml) *****  
ncpml=8 ! number of cell in pml  
tcpml=ncpml*dl ! thickness of pml  
!***** sinusoidal frequency *****  
freq=2.45d9 ! Hz
```

subroutine j_source_2dtm

```
do j=nint((yi(1)+yi(8))/2.0)-nint(40.0d-3/dy),nint((yi(1)+yi(8))/2.0)-1  
k=zi(2)+2  
id=id_ey(j,k)  
ey(j,k)=ey(j,k) &  
-(dt/eps(id))/(1+(sig(id)*dt/(2.0d0*eps(id)))) &  
*(-2.0d0/sqrt(mu0/eps0)/dz & ! J [A/m2]  
*dsin(2.0d0*pi*freq*(time-dt/2.0d0))  
end do
```

subroutine media_coeff_2dtm

```
! rectangular media (cavity metal)  
mys=nint((yi(1)+yi(8))/2.0)-nint(120.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(120.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)-nint(160.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(160.0d-3/dz)  
call rectangular_media_1  
  
! rectangular media (waveguide metal)  
mys=nint((yi(1)+yi(8))/2.0)-nint(44.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(4.0d-3/dy)  
mzs=zi(1)  
mze=nint((zi(1)+zi(8))/2.0)  
call rectangular_media_1  
  
! rectangular media (cavity thick metal)  
mys=nint((yi(1)+yi(8))/2.0)-nint(160.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(160.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)-nint(200.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(200.0d-3/dz)  
call rectangular_media_1  
  
! rectangular media (cavity air)  
mys=nint((yi(1)+yi(8))/2.0)-nint(101.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(101.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)-nint(143.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(143.0d-3/dz)  
call rectangular_media  
  
! rectangular media (waveguide air)  
mys=nint((yi(1)+yi(8))/2.0)-nint(40.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)  
mzs=zi(1)  
mze=nint((zi(1)+zi(8))/2.0)  
call rectangular_media  
  
! rectangular media (gap air)  
mys=nint((yi(1)+yi(8))/2.0)-nint(160.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(160.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)+nint(141.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(143.0d-3/dz)  
call rectangular_media  
  
! rectangular media (choke air)  
mys=nint((yi(1)+yi(8))/2.0)+nint(130.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)+nint(150.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)+nint(141.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(171.0d-3/dz)  
call rectangular_media  
  
! rectangular media (choke air)  
mys=nint((yi(1)+yi(8))/2.0)-nint(150.0d-3/dy)  
mye=nint((yi(1)+yi(8))/2.0)-nint(130.0d-3/dy)  
mzs=nint((zi(1)+zi(8))/2.0)+nint(141.0d-3/dz)  
mze=nint((zi(1)+zi(8))/2.0)+nint(171.0d-3/dz)  
call rectangular_media
```

