v1.3 Mar.2016

Parabola

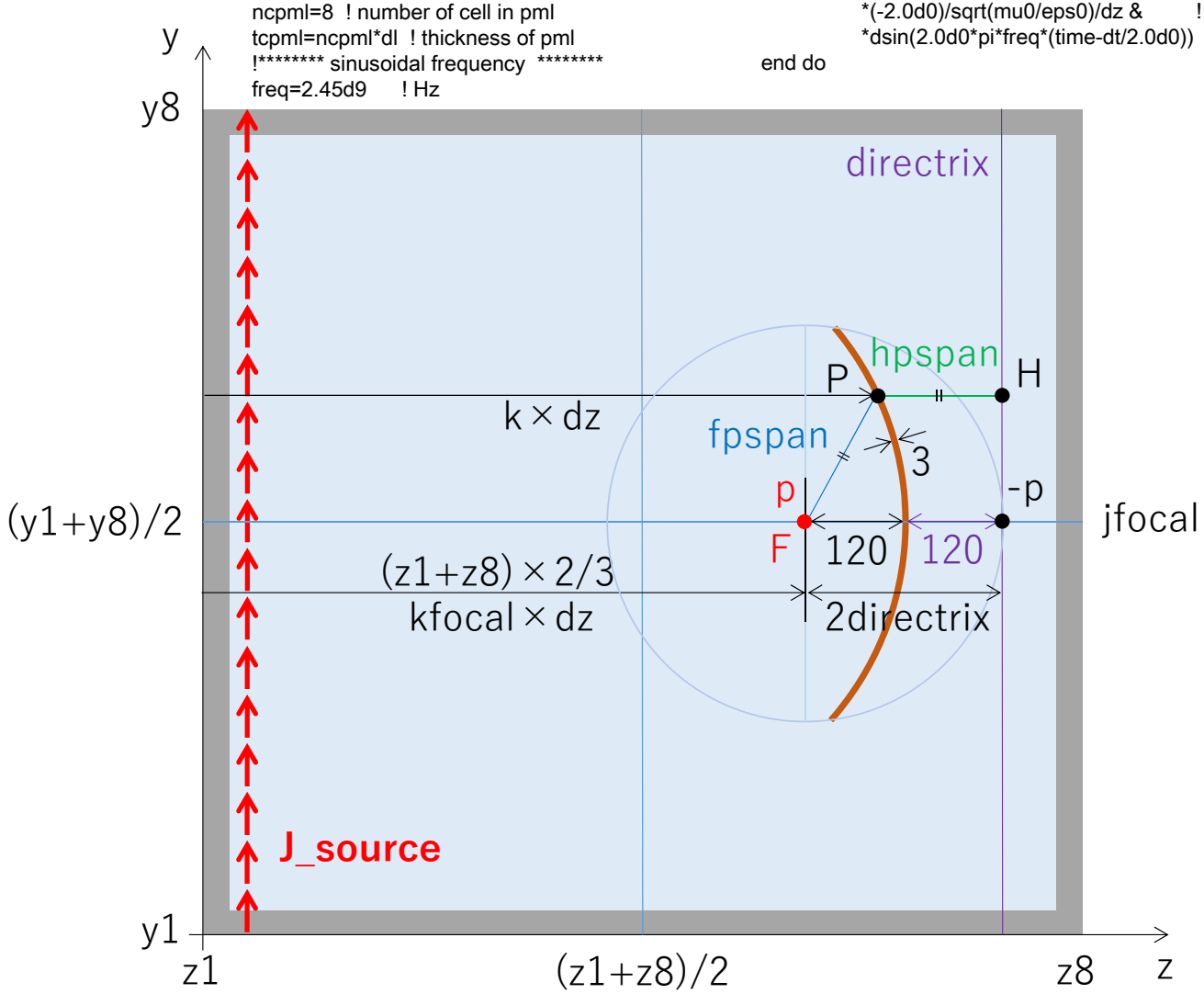
```
subroutine lattice_time_2dtm
!******** lattice widths ********
dl=2.0d-3
dy=dl
dz=dl
!******** number of cells in pml (ncpml) ********
ncpml=8  ! number of cell in pml
tcpml=ncpml*dl  ! thickness of pml
!******** sinusoidal frequency  ********
freq=2.45d9      ! Hz
```

```
subroutine j_source_2dtm
 do j=yi(1),yi(8)-1   ! for z propagation
 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
 ! id=0 vacume
   eps(0)=eps0
   sig(0)=0.0d0
   mu(0)=mu0
   ! id=1 pec,pmc (no define, see <e-field> or <h-field> )

 ! focal point of parabola
   jfocal=nint((yi(1)+yi(8))/2.0)
   kfocal=nint((zi(1)+zi(8))*2.0/3.0)
   directrix=120.0d-3
   call paraboloid
```

焦点

準線

```
subroutine paraboloid
  do j=1,iy
    do k=1,iz-1
      fpspan=sqrt(((j-jfocal)*dy)**2+((k-kfocal)*dz)**2)
      hpspan=sqrt(((k-(kfocal+nint(2.0*directrix/dz)))*dz)**2)
      if(abs(fpspan-hpspan) <= 3.0d-3 .and. fpspan <= 240.0d-3) then
        id_ez(j,k)=1
      end if
    end do
  end do
  do j=1,iy-1
    do k=1,iz
      fpspan=sqrt(((j-jfocal)*dy)**2+((k-kfocal)*dz)**2)
      hpspan=sqrt(((k-(kfocal+nint(2.0*directrix/dz)))*dz)**2)
      if(abs(fpspan-hpspan) <= 3.0d-3 .and. fpspan <= 240.0d-3) then
        id_ey(j,k)=1
      end if
    end do
  end do

end subroutine paraboloid
```