Code for atomic scattering factor of Li

```
        open(1,file="fsum5.txt")
        a1=0.20
        a2=1.60
        pi=3.141592
!
        do i=0,10000
        stol=0.0001*float(i)
        f=2.0/(1.0+4.0*(pi*a1*stol)**2)**2+(1.0+4.0*(pi*a2*stol)**2)**(-2)
!
        if(i.ne.0) then
        fsum=0.0
        dr=0.2   ← smaller, better
        do j=0,50   ← larger, better
          rr=dr*float(j)
          fsum1=1.0/(pi*a1**3*stol)*rr*exp(-2.0*rr/a1)*sin(4.0*pi*rr*stol)*dr
          fsum2=1.0/(pi*a2**3*stol)*rr*exp(-2.0*rr/a2)*sin(4.0*pi*rr*stol)*dr
          fsum=fsum+2.0*fsum1+fsum2
        end do
        else
        fsum=3.0
        end if
        write(1,*) stol,f,fsum

!
        end do
!
        close(1)
        stop
        end
```