

```

PROGRAM etosig
*****
* Conversion of pseudo dielectric functions to dielectric function.      *
* this one is for p-polarized light, with isotropic epsilon, so that    *
* sqrt(eps(pseudo))=eps cos(teta) / sqrt( eps - sin^2(teta))           *
* from standard input it reads                                          *
* inputfilename                                                         *
* angle of incidence                                                    *
* the standard input file must have the format x eps1 eps2             *
* The outputfile comes as: x e1,e2,e1',e2'                             *
*****
REAL X(100000),e1,e2,phi,pi,csp2,tgp2
complex epsil(100000),ep,em,ca,cb
CHARACTER*40 flin
INTEGER I,mm
read(*,'(a40)') flin
read(*,*) phi
pi=4*atan(1.)
phi=phi*pi/180.
csp2=(cos(phi))**2
tgp2=(tan(phi))**2
open(23,FILE=flin)
mm=100000
do 10 i=1,mm
  READ(23,*,END=11) X(i),e1,e2
  epsil(i)=cplx(e1,e2)
10 continue
11 mm=i-1
close(23)
do 25 i=1,mm
  ca=0.5*epsil(i)/csp2
  cb=ca*csqrt(1-epsil(i)*tgp2/(ca*ca))
  ep=(ca+cb)
  em=(ca-cb)
  write(*,*) x(i),real(ep),aimag(ep),real(em),aimag(em)
25 continue
END

```