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PROGRAM etorp
*****
* Conversion of dielectric functions to p-reflectivity.
* from standard input it reads
* input file name
* angle of incidence in degree
* the input file must have the format x eps1 eps2
* The output comes as: x rp
*****
REAL X(100000),e1,e2,angle,cst,snt2
complex epsil(100000),cn,cr,eps2,cn2,cr2
INTEGER I,mm
character*40 flin
read(*,'(a40)') flin
open(23,file=flin)
read(*,*) angle
angle=angle*3.14159265/180
cst=cos(angle)
snt2=1-cst*cst
mm=100000
do 10 i=1,mm
  READ(23,*,END=11) X(i),e1,e2
  epsil(i)=cplx(e1,e2)
10 continue
close(23)
11 mm=i-1
do 25 i=1,mm
  cn=csqrt(epsil(i)-snt2)
  cr=(epsil(i)*cst-cn)/(epsil(i)*cst+cn)
  write(*,*) x(i),cabs(cr)**2
25 continue
END

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