Subject: Re: Hankel (Fourier-Bessel) Transform
Posted by thompson on Tue, 24 Jul 2001 19:15:17 GMT
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Georg.Pabst@nrc.ca (Georg Pabst) writes:

> Hi,

> I'm looking for the Hankel (Fourier-Bessel) Transform, i.e.,
> int(0,infinity) f(t)*BesselJ(t*r)t dt being implemented in IDL.

> There is a paper "Siegman A. 1980. Quasi fast Hankel transform. Opt.
> Lett. 1, 13-15" and one can also find the code in Fortran or C...

> Thanks,
> Georg

Here's an old program that I think might be what you need.

Bill Thompson

```
 FUNCTION HANKEL,F
;
;  This function returns the Hankel transform of the argument.
;
 S = SIZE(F)
 IF S(0) NE 1 THEN BEGIN
  PRINT,'*** Variable must be a one-dimensional array, name= F, routine HANKEL.'
  RETURN,F
 ENDIF
;
 X = INDGEN(F)
 K = ( 2. * !PI / FLOAT(N_ELEMENTS(X)) ) * X
 SC = 0.*X + 1.
 IF N_ELEMENTS(SC) GT 3 THEN BEGIN
  SC(0) =  3.D0 /  8.D0
  SC(1) =  7.D0 /  6.D0
  SC(2) = 23.D0 / 24.D0
 ENDIF
;
 H = BES0( K # X )  #  ( K * F * SC )
;
 RETURN,H
 END
```