
Subject: Re: Legenders polynomial

Posted by [bstecklu](#) on Mon, 11 Jun 2012 19:39:03 GMT

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May be I am missing something but if you mean the Legendre polynomial, idlhelp states that the corresponding function exists in IDL since version 5.4. So was this a kind of exercise?

Regards, Bringfried

gutewaqi wrote:

> Dear All,

>

> I was trying to compute the legender function. I wrote the code as shown
> below. But it is not working right. could you help. Thank you in advance

> -----

>

> PRO legenders_function,theta,lmax

>

> ;Give the IDL compiler information that changes some of the default rules

> COMPILE_OPT idl2, HIDDEN

>

> ; Error handling. ; CATCH, theError ; IF

> theError NE 0 THEN BEGIN ; Catch, /CANCEL ;

> void = ERROR_MESSAGE() ; RETURN ; ENDIF

>

> ;declare global variables COMMON MYGLOBAL,alm,blm ;set maximum degree,i.e

> lmax lmax = 60 ;initialization legenders function factors m = fltarr(lmax+1)

> l = fltarr(lmax+1) X = replicate(0.0,lmax+1, lmax+1) alm =

> replicate(0.0,lmax+1, lmax+1) blm = replicate(0.0,lmax+1, lmax+1) alm[2,2] =

> sqrt(3) ;compute the legenders function factors IF

> size(alm[*],0)/dimensions)LT lmax+1 THEN BEGIN FOR l=2,lmax-1 DO BEGIN

> alm[l+1,l+1] = sqrt((2.0*l+1.0)/(2.0*l)) ENDFOR FOR m=0,lmax-1 DO BEGIN FOR

> l=m+1,lmax-1 DO BEGIN X=(2.0*l+1.0)/((l+m)*(l-m)) alm = sqrt(X*(2.0*l-1.0))

> blm = sqrt(X*(l-m-1.0)*(l+m-1.0)/(2.0*l-3.0)) ENDFOR ENDFOR ENDFIF

>

> ; set the values of theta in radian cosTheta = cos(3) sinTheta = sin(3)

> ;initialization of legenders function Plm = replicate(0.0,lmax+1, lmax+1)

> Plm[1,1] = 1.0 ;compute the legenders function values FOR l=0,lmax-1 DO BEGIN

> Plm[l+1,l+1] = alm[l+1,l+1]*sinTheta*Plm[l,l] ENDFOR

>

> FOR m=0,lmax-1 DO BEGIN Plm[m+2,m+1] = alm[m+2,m+1]*cosTheta*Plm[m+1,m+1]

> ENDFOR

>

> FOR m=0,lmax-1 DO BEGIN FOR l=m+2,lmax DO BEGIN Plm[l+1,m+1] =

> alm[l+1,m+1]*cosTheta*Plm[l,m+1]-blm[l+1,m+1]*Plm[l-1,m+1] ENDFOR ENDFOR

> print,'program completed' END

>

> --http://compgroups.net/comp.lang.idl-pvwave/
>
>

Subject: RE: Legenders polynomial
Posted by [Baro](#) on Tue, 12 Jun 2012 08:44:33 GMT
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Hello Bringfried

Thank you for your concern.

Yes, there is a function in IDL. But I was doing this for GRACE satellite data analysis, I need to know the approach used in generating this data's. After a sleepless night I have solved the problem.

cheers
Guta
