
Subject: Re: math symbols for postscript
Posted by [deutsch](#) on Tue, 18 Jan 1994 23:24:48 GMT
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In article q9h@senator-bedfellow.MIT.EDU, jabarone@ATHENA.MIT.EDU (John A Barone) writes:

> Hi, I'm looking for a postscript font, to use with IDL, that has
> math symbols, integral sign, partial derivative, etc. I asked
> a similar question earlier and received some useful responses
> explaining that the postscript symbol font has some math symbols.
> Although it has many of the symbols that the Hearshey math font
> has, some important ones are missing, in particular a symbol
> for partial derivatives. I was wondering if anyone knows

Postscript Symbol font character number 182 is a partial derivative symbol.

> of a postscript font one could use with IDL that has a more
> complete set of math symbols. I'm trying to write a hearshey-to-
> postscript converter so that I can print inputted math equations
> using postscript fonts, which look much nicer printed out than
> equations using the hearshey fonts IMHO.

Since the subject of using Postscript fonts comes up periodically, below a short MAIN_PROGRAM which illustrate use of Postscript hardware fonts (including Angstrom symbol and all). There is also a MAIN_PROGRAM which prints out character sets, so you can see which number corresponds to which character. Please let me know if you have questions or additions to these programs. Also, if anyone is interested in the setps and psclose procedures, I can make them available; they simplify use of Postscript a little...

cheers,
Eric

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psspecxmpl.pro

```
; This MAIN_PROGRAM is a demo of how to make publication quality output in  
; IDL using Postscript fonts. The program can also be run on X displays  
; with the Hershey Triplex font, but special characters will not come out  
; looking the same (the price you pay for better quality printed output.)  
; See also charsets.pro which prints out the characters sets to the printer.
```

```
; Send comments or changes to: deutsch@astro.washington.edu (Eric Deutsch)
;
; You can run this program with something like:
; IDL> setps,/landscape ; direct output to landscape Postscript
; IDL> .run psspecxmpl.pro ; run this program to generate spectrum
; IDL> psclose,auto='sol' ; send output to printer queue sol
```

```
wl=indgen(2000)*4+1000 ; generate wavelength array
spec=sin(wl/150.)*3+4+randomu(seed,2000) ; generate a noisy sine wave
```

```
if (!d.name eq 'PS') then begin ; If Postscript output mode
  !p.font=0 ; select hardware fonts
  device,/helv,/isolatin1 ; Helvetica ISOLatin fontset
  ang=string(197B) ; Angstrom sym char string
  thk=4 ; thick borders are nice
endif else begin ; If screen or other output mode
  !p.font=-1 ; select Hershey fonts
  xyouts,0,0,/norm,'!17' ; Set to Triplex Roman font
  ang='A' ; Just use A for Angstrom
  thk=1 ; use regular thickness
endelse
```

```
; Now create the plot. Note that !U is for superscript (Up) and !N is
; for Normal letter sizes.
```

```
plot,wl,spec,yr=[0,10], $
  xtitle='Wavelength ('+ang+')', $
  ytitle='Flux (10!U-13!N erg cm!U-2!N s!U-1!N '+ang+'!U-1!N)', $
  title='What a Weird Spectrum', $
  xcharsize=1.5, ycharsize=1.5, xthick=thk, ythick=thk
```

```
; print a legend-style string with some fancy characters. !9 switches to
; the Postscript Symbol font. !X switches back to the initial font.
; string(nnnB) is a way to generate a string containing a character of
; ASCII value nnn (You NEED the 'B').
```

```
xyouts,1000,9,/data,'H!9b!X: !9s '+string(179B)+'!X 4.23'+string(215B)+ $
  '10!U-13!N '+string(177B)+' 0.54',charsize=2
```

```
; also here's a fancy example of printing world coordinates. !S is save
; a position and !R is to restore to that position.
```

```
degsym='!9'+string(176B)+'!X'
minsym='!9'+string(162B)+'!X'
secsym='!S.!R!9'+string(178B)+'!X'
```

```
xyouts,1000,8.2,/data,charsize=2,!9a!X(1950)=15!Uh!N37!Um!N 23!S.!R!Us!N31'+$
  ' !9d!X(1950)=+56'+degsym+'34'+minsym+'15'+secsym+'2'
```

end

charsets.pro

```
; This MAIN_PROGRAM creates a printed Character Set list for a Postscript
; printer. This program requires the 'setps' and 'psclose' programs,
; although it can be modified to just use set_plot,'ps' and then
; appropriate scaling commands (which is what setps does.)
; Send comments or changes to: deutsch@astro.washington.edu (Eric Deutsch)
;
; Simply run with:
; IDL> .run charsets
```

```
setps,8,10.5,.25,.25 ; Set 8"x10" Portrait plot window
!p.font=0 ; harware fonts
```

```
fontnum=1 ; select a font to print
; below are some examples of 4 interesting fonts. Change or add the ones
; you want to print.
```

```
if (fontnum eq 1) then begin & device,/helv,/isolatin1 & $
    title='Helvetica ISOLatin1' & endif
```

```
if (fontnum eq 2) then begin & device,/symbol & $
    title='Symbol' & endif
```

```
if (fontnum eq 3) then begin & device,/times,/isolatin1 & $
    title='Times Roman ISOLatin1' & endif
```

```
if (fontnum eq 4) then begin & device,/palatino,/italic,/isolatin1 & $
    title='Palatino Italic ISOLatin1' & endif
```

```
plot,[0,60],[0,60],/nodata,xsty=7,ysty=7,$
    position=[0,0,1,1] ; set up coordinates
xyouts,30,58,/data,align=.5,title ; print title
```

```
col=0
row=0
for i=0,255 do begin ; loop over all characters
    xyouts,col+5,55-row,strn(i)+'= '+string(byte(i)),/data
    row=row+1
    if (row eq 52) then begin
        col=col+11
        row=0
    end if
end for
```

```
endif  
endfor
```

```
psclose ; close Postscript channel
```

```
end
```
