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Subject: Re: How to do multiple plots w/out space between 'em

Posted by [paul](#) on Tue, 23 May 1995 07:00:00 GMT

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In article <3pr38e\$p5u@hecate.umd.edu>, bleau@UMDSP.UMD.EDU (Lawrence Bleau) writes:

|> Hi. I'm posting this on behalf of one of my users. We are running IDL v3.0.0  
|> on a VAX running OpenVMS 5.5-2.

|>  
|> ---- start included file ----  
|> how do I produce this sort of plot with IDL?  
|>  
|>  
|> |-----+-----+-----+-----+-----+-----+ | <- same x-axis  
|> |  
|> |  
|> y1|  
|> |  
|> |  
|> |-----+-----+-----+-----+-----+-----+ | <- same x-axis  
|> |  
|> |  
|> y2|  
|> |  
|> |  
|> |-----+-----+-----+-----+-----+-----+ | <- same x-axis  
|> |  
|> |  
|> y3|  
|> |  
|> |  
|> |-----+-----+-----+-----+-----+-----+ | <- same x-axis  
|>  
|>                   x-axis  
|> ...

Here's how:

```
function ymulti,p,np=np,ymargin=ymargin,space=space
;+
;routine: ymulti
;
;purpose: set up margins for vertically stacked multi frame plot
;
;input:
;
;p       named variable, contains stuff you don't need to know
;         the contents of p are changed after each call
;
;Keyword input
;
;np       number of frames in plot, set on first call only (see examples)
```

```

;
; ymargin  2 element vector specifying overall margin setting
;      below (0) and above (1) multiframe plot
;      if ymargin is not set the top and bot margin is taken
;      from !y.margin. This keyword is ignored when NP not set
;
; space    the separation distance between frames of a multiframe
;      plot in units of the character height. This keyword is
;      ignored when NP not set. Default is no space between plots
;
;
; SIDE EFFECTS: changes the value of !p.multi(4) to enforce column major
;      ordering of plots. To reinsert the default row major
;      ordering, set !p.multi=0 or !p.multi(4)=0
;
; EXAMPLE:   create a three frame plot
;
; y1=smooth(randomu(iseed,200),3)
; y2=smooth(y1,11)
; y3=smooth(randomu(iseed,200),11)
; y4=smooth(y3,3)
;
; !p.multi=[0,1,3]
; plot,y1,xchars=.001, chars=2, ymargin=ymulti(p,np=3,ymargin=[5,3],space=1)
; plot,y2,xchars=.001, chars=2, ymargin=ymulti(p)
; plot,y3,      chars=2, ymargin=ymulti(p)
;
;; Note the use of XCHARSIZE to disable x-axis labeling for first two plots.
;; Now try a four frame plot with no space between frames
;
; !p.multi=[0,1,4]
; plot,y1, xchars=.001, chars=2, ymargin=ymulti(p,np=4)
; plot,y2, xchars=.001, chars=2, ymargin=ymulti(p)
; plot,y3, xchars=.001, chars=2, ymargin=ymulti(p)
; plot,y4,      chars=2, ymargin=ymulti(p)
;
;; Now try a multi-column plot
;
; !p.multi=[0,2,4]
;
; plot,y1,xchars=.001, chars=2, title='top left',ymar=ymulti(p,np=2)
; plot,y2,      chars=2, ymargin=ymulti(p)
;
; plot,y3,xchars=.001, chars=2, title='bottom left',ymar=ymulti(p,np=2)
; plot,y4,      chars=2, ymargin=ymulti(p)
;
; plot,y1*y1,xchars=.001, chars=2, title='top right',ymar=ymulti(p,np=2)
; plot,y2*y2,      chars=2, ymargin=ymulti(p)

```

```

;
; plot,y3^2,xchars=.001, chars=2, title='bottom right',ymar=ymulti(p,np=2)
; plot,y4^2,      chars=2, ymargin=ymulti(p)
;

;
;

; AUTHOR      Paul Ricchiazzi          mar94
;           Institute for Computational Earth System Science
;           University of California, Santa Barbara
;-
;=====
; p =[ymargin(0),ymargin(1),margin_increment, space]
;
; let b(i)=bottom margin of plot i
; let t(i)=top margin of plot i
;
;
;
; a multiplot frame plot will have uniform spacing between plots when
;
;
;
; t(0)=top_margin
; b(np-1)=bot_margin
;
; t(i) + b(i-1) = space
; t(i) + b(i)   = ((np-1)*space+top_margin+bot_margin)/np = ds
;
;
; which can be solved by substitution,
;
;
; b(0)=ds-t(0)
;
; t(i)=space-b(i-1) & b(i)=ds-t(i)    i=1,np-1
;
;
;=====

```

if keyword\_set(ymargin) eq 0 then ymargin=!y.margin

```

if keyword_set(np) then begin
  if keyword_set(space) eq 0 then space=0
  !p.multi(4)=1
  ds=float((np-1)*space+total(ymargin))/np
  top=ymargin(1)
  bot=ds-top
  p=[bot,top,ds,space]
endif else begin
  p(1)=p(3)-p(0)
  p(0)=p(2)-p(1)
endelse

```

```
return,p(0:1)
```

```
end
```

```
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```

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If I have seen farther than others, it is by standing on the shoulders of giants.		If I have not seen as far as others, it is because giants were standing on my shoulders.
Isaac Newton		Hal Abelson

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