Subject: Re: Q: contour levels from IDL
Posted by hcp on Wed, 22 Mar 2000 08:00:00 GMT
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In article <8b5pfs$m7e$1@nnrp1.deja.com>, Mirko Vukovic <mvukovic@taz.telusa.com> writes:

|> My problem is how to choose intelligent levels. The only way I could
|> think of is to plot (2dplot) the z component of the data in a temp
|> (ram?) window, and observe the z ticks used by IDL, and use those as
|> contour levels.

Faced with this, I wrote my own contour chooser which I enclose below.
You give it a max, min and a number of contours and you get back an array
with values whose last digits are like 1,2,3,4 or 2,4,6,8 or
5,10,15,20,25. I like it. YMMV. Sorry about the commented-out
debugging statements.

Enjoy

Hugh

```
function conpick,minval,maxval,ndesired
; This function returns a set of contours suitable for the range of
; values beween max and min. on input ndesired is the number of contours
; you want; you actually get between ndesired and 2*ndesired
; contours.


;*** Work out a nice spacing for the contours ***

if maxval lt minval then begin
   tmp=maxval
   maxval=minval
   minval=tmp
endif
range=double(maxval)-double(minval)
;print,'range=',range
initspace=range / (ndesired-1)
;print,'initspace=',initspace
reduspace=alog10(initspace)
;print,'reduspace=',reduspace
pwroften=long(reduspace)
if reduspace lt 0.0 then pwroften=pwroften-1
;print,'pwroften=',pwroften
reduspace=reduspace-pwroften
;print,'reduspace=',reduspace
```

```
reduspace=10.^reduspace
;print,'reduspace=',reduspace,' Choosing spacing'

if(reduspace ge 5.0) then spacing=5.0 $
;else if(reduspace ge 2.5) then spacing=2.5$
else if(reduspace ge 2.0) then spacing=2.0$

else spacing=1.0
;print,'spacing=',spacing
spacing=spacing*10.^pwroften
;print,'spacing=',spacing

if( (not finite(spacing)) or (not finite(reduspace))) then begin
   print,'Error in routine conpick: failed to pick suitable contours'
   return,findgen(ndesired)
endif

; *** Work out a minimum value that fits in with the spacing ***
gak=(abs(minval)/(10.0^(pwroften+1)))
igak=long(gak)
if gak lt 0.0 then igak=igak-1
newminval=(10.0^(pwroften+1))* igak
;print,'newminval=',newminval

while(newminval lt abs(minval)) do newminval=newminval+spacing
;print,'newminval=',newminval

if(minval lt 0.0) then newminval=-newminval else newminval=newminval-spacing
;print,'newminval=',newminval,' Making contours'

upper=newminval
ncontours=0
while ( upper lt maxval ) do begin
   upper=newminval+ncontours*spacing
   ncontours=ncontours+1
endwhile
;print,' made',ncontours,' Contours'
clevs=findgen(ncontours)*spacing + newminval

return,clevs

end
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