
Subject: Where and lists of regions

Posted by [Ben Panter](#) on Mon, 11 Oct 2004 12:47:23 GMT

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Hi,

I'm in the middle of trying to simplify a large body of code which I inherited a few years ago and have been mangling ever since. Among other things, I'd be interested in anyone's thoughts on simplifying the case statement I use (full code below). Basically I have a list of regions which I want to remove from a vector. At the moment I use CASE to call WHERE to remove the regions elements (case to choose how many where statements are required). This is fine for a few regions, but I'm sure there must be a neater way, as when I need 10 regions, or even 20, this code is going to look terrible...

I've written a code with EXECUTE, but I may want to use VM in the future so I'd like to avoid it if possible.

Many Thanks,

Ben

CODE:

```
function em_screen, wave, em_string

; returns a list of indes which are to be included. EXCLUDED regions
; are contained in a string with the format:
; '4400-5000,6500-6700,8000-8900'
; The ranges must be monotonic

print, 'Emission line regions:'+em_string

if em_string[0] eq 'none' then output=wave else begin

em_list=strsplit(em_string, ',', /extract)
n_region=n_elements(em_list)
em=intarr(n_region,2)
case n_region of

1: begin
for i=0,n_region-1 do em[i,*]=strsplit(em_list[i], '-', /extract)
output=where((wave le em[0,0]) or (wave ge em[0,1]))
end
2: begin
for i=0,n_region-1 do em[i,*]=strsplit(em_list[i], '-', /extract)
output=where((wave le em[0,0]) or ((wave ge em[0,1]) and (wave le
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em[1,0])) or (wave ge em[1,1]))
end
3: begin
  for i=0,n_region-1 do em[i,*]=strsplit(em_list[i], '-', /extract)
  output=where((wave le em[0,0]) or ((wave ge em[0,1] and (wave le
em[1,0])) or ((wave ge em[1,1] and (wave le em[2,0])) or (wave ge em[2,1]))
  end
4: begin
  for i=0,n_region-1 do em[i,*]=strsplit(em_list[i], '-', /extract)
  output=where((wave le em[0,0]) or ((wave ge em[0,1] and (wave le
em[1,0])) or ((wave ge em[1,1] and (wave le em[2,0])) or ((wave ge
em[2,1] and (wave le em[3,0])) or (wave ge em[3,1]))
  end
5: begin
  for i=0,n_region-1 do em[i,*]=strsplit(em_list[i], '-', /extract)
  output=where((wave le em[0,0]) or ((wave ge em[0,1] and (wave le
em[1,0])) or ((wave ge em[1,1] and (wave le em[2,0])) or ((wave ge
em[2,1] and (wave le em[3,0])) or ((wave ge em[3,1] and (wave le
em[4,0])) or (wave ge em[4,1]))
  end

else: begin
  print, 'ERROR: Something is wrong with the format of the em_list string'
  print, 'Use either none or 3000-4000,5000-5500 etc. CASE SENSITIVE'
  end
endcase

end

return, output

END

```
