
Subject: Calculating difference between each element in array from previous

Posted by [morganlsilverman](#) on Fri, 29 Mar 2013 14:43:29 GMT

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Hello,

I'm trying to rewrite my code to eliminate for loops as much as possible. I believe I have to have one to start because I'm trying to match a list of dates in one array to a list of dates in another.

```
for k=0,n_elements(mcity)-1 do begin
indexa = where(strmatch(strmid(aatea,0,8),strmid(mdate(k),0,8)) eq 1,num)
```

It only seems to work if I go one mdate at a time. Thats fine but I'd like to eliminate the other if statements and for loops within this one to speed up calculations if possible. Once I match the date I need to find out if the array matches a selection of criteria to decide whether to use that array or not.

```
if num gt 0 then begin ; If matches then go through profile criteria
  inda = where(finite(aalta(col,row,*)), count) ; Count number of non-NaN altitudes
  if (n_elements(inda) ge 15 ) then begin
    dcount=0
    diffa = fltarr(50)
    for k=0,count-2 do begin
      diffa(k) = aalta(col,row,inda(k+1))-aalta(col,row,inda(k))
      dcount = dcount+1
    endfor
    diffa = diffa(0:dcount-1)
```

```
; Only interested in profiles with altitude differences less than 500 m
```

```
if (max(abs(diffa)) lt 500.0) then begin
  if (j eq 0) or (j gt 0 and i ne iprev) then begin
    jcount = 0
    icount = icount + 1
  endif else begin
    if (j gt 0 and i eq iprev) then begin
      jcount = jcount + 1
      icount = icount
    endif
  endelse
```

```
; Now do calculations...
```

```
  endif
endif
endif
endfor
```

Is there a way to eliminate the diffa loop... and calculate the differences between each altitude

another way?

```
for k=0,count-2 do begin
  diffa(k) = aalta(col,row,inda(k+1))-aalta(col,row,inda(k))
  dcount = dcount+1
endfor
```

I've been reading online about eliminating for loops and rebin/reform but haven't been able to figure out what would work best if anything. Thanks.

Sincerely,
Morgan
