
Subject: Re: Avoiding FOR loops ?

Posted by [Dick Jackson](#) on Wed, 25 Aug 2004 15:35:03 GMT

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Hi Pepe,

"Pepe" <sdj@tiscali.it> wrote in message
news:56bc95a7.0408250231.6a55e2b6@posting.google.com...

> Dear All,

>

> Is there a way to avoid the FOR loops in the following code:

>

> ;no. of months & no. of lat, lon points

> n_months = 256

> lon = 1304

> lat = 1028

>

> ;3-D array with SST observations for all

> ;months and all pixels - Populated

> data_all = fltarr(n_months, lon, lat)

>

> ;Array of all valid observations across all months

> ;for all pixels - To be populated

> data_obs = intarr(lon, lat)

>

> ;Array of mean values across all months

> ;for all pixels - To be populated

> data_mean = fltarr(lon, lat)

>

> ;Array of median values across all months

> ;for all pixels - To be populated

> data_median = fltarr(lon, lat)

>

> ;The values of LAND to be avoided

> ;Bad value obs is defined as 0

> def_val = -9999.9

>

> FOR ilon = 0, lon - 1 DO BEGIN

> FOR ilat = 0, lat - 1 DO BEGIN

> valid = where(data_all(*, ilon, ilat) NE def_val AND \$

> data_all(*, ilon, ilat) NE 0, count =

valid_obs)

*** NB: this should be: data_all(*, ilon, ilat) NE 0, valid_obs)
(but we're not going to use it anymore!)

> data_obs(ilon, ilat) = valid_obs

> data_mean(ilon, ilat) = mean(data_all(*, ilon, ilat))

```
>      data_median(ilon, ilat) = median(data_all(*, ilon, ilat))
>      ENDFOR
> ENDFOR
```

I think what you're looking for, instead of the entire FOR loop block, is:

```
elementIsValid = data_all NE def_val AND data_all NE 0
data_obs = Total(elementIsValid, 1)
```

```
data_mean = Total(data_all, 1) / n_months
data_median = Median(data_all, Dimension=1) ; <- requires IDL 5.6
```

In fact, with this method, you wouldn't need to declare data_obs, data_mean and data_median above.

Hope this helps!

Cheers,

--

-Dick

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