
Subject: Re: Filtering data in multidimensional arrays
Posted by [Martin Schultz](#) on Fri, 02 Jun 2000 07:00:00 GMT
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Hi Simon,

first of all: which data are you working on there: PEM-West or PEM-Tropics ?
Are you using merged data sets or are you working with the original files from the GTE website?

As to your problem: if it's only the plot you are concerned about, try using the MIN_VALID keyword and set it to a reasonably low number (usually 0. except for the longitude which may extend to -180 ;-). If you really need to get rid of that data (e.g. for computing a mean etc.), it depends on how you store the data exactly. I usually have arrays with dimensions where observations loops from 0 to however many there were, and variables is the number of variables you read in. I also keep a string array containing the variable names. To distinguish between various flights, I have a variable named 'FLIGHT', and to have a continuous time vector, I add the julian day and the time (divided by 24.).
Then, say I want to filter a certain longitude range and eliminate all missing values, what I do is:

```
lon = where(StrUpCase(Names) eq 'LON') ; if you go beyond your  
personal hack
```

```
                ; please add error checking
```

```
!
```

```
lon = reform( data )  
ok = Where(lon gt 150. OR lon le -100 )
```

```
regional_data = data  
; then I extract all variables I want to plot and eliminate missing  
values
```

```
itime = where(StrUpCase(Names) eq 'CONTINUOUSTIME')  
io3 = where(StrUpCase(Names) eq 'OZONE')  
time = reform(regional_data)  
o3 = reform(regional_data)
```

```
ok = where(o3 ge 0.)  
plot,time, o3  
print,'Mean, median of Ozone = ',mean(o3), median(o3)
```

Hope, this helps,
Martin

Simon de Vet wrote:

```
>
> David Fanning wrote:
>
>> Humm, I'd have to see a little code to see what it is exactly you
>> are trying to do, but I have no time to look at it today. This is
>> a pretty small array, however. Why don't you just break the problem
>> up into (20?) pieces that you know how to deal with and do it in
>> a loop? It may cost you 0.000348302 seconds of processing time,
>> but it would be finished by the end of lunch today. :-)
>
> I'm not even sure if I could do this, but I'll give it a try.. It's awkward since
> I'll have to eventually read in another 3 data sets with similar properties, and
> I'd much rather handle 4 big arrays than 80 little ones. It's my own brain I'm
> worried about, not the computer's!
>
> I think my problem may be that my array is not consistent. I can apply one filter
> to the flight# (3-19 only), but I cannot apply a single filter to the point
> number, since this varies from flight to flight. On flight 3, there may only be 10
> data points, but flight 4 may have 12, flight 4 21, etc...
>
> Perhaps I am misunderstanding the usage of the filter. Am I producing separate
> filters for each dimension (hence the problem above), or am I producing a global
> filter for the entire array (which treats entries individually, and not generically
> by dimension)?
>
> Simon
```

--

```

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```
