
Subject: missing data

Posted by [caron](#) on Wed, 15 Jun 1994 17:29:37 GMT

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1) efficiency of where():

Can anyone comment on the efficiency of using:

```
max = max( my_arr(where(my_arr ne missing_data)))
```

to find the maximum value of an array, but excluding missing values?

the array here has size 63000 elements, and only a few (0 - 30) are "missing". I am imagining that the where() command returns an array of indices, which then is used to grab just those indices out of my_arr.

In a higher level language I could make a single pass through my_arr to find the max value, excluding the missing data as I go.

Is there a more efficient way to do this in IDL, or is this just the price we pay for its generality?

2) general ramblings on missing data and contour():

Can anyone comment on "good" ways to handle missing data? I map missing data to a very large number, so that I can exclude it from plots using the max_value keyword. Currently I believe that countour() does not actually work correctly with max_value. Contour lines seem to stop at regions of missing data, and contour fills get really messed up. I suppose you could claim this is reasonable, but RSI hasn't gotten back to me as to whether they consider this behavior a feature or a bug (hello?).

What should contour do in the presence of missing data? Well, it could ignore it, and draw contours based on the good data. Since the contour algorithm probably assumes a regular grid, you could "fill in" the missing data using simple interpolation. This is equivalent to assuming that the data represents a sampling of an underlying continuous physical value, which is pretty much what contouring assumes.

On the other hand, you could argue that you wouldn't want to show the user data that's "not really there", so contours must not go through regions of missing data. If that's the assumption contour() makes, I can replace my missing data myself with interpolated values if I want continuous contours. Can RSI verify that's the assumption they make with no plans to fix this behavior or add an option to change it? Does RSI have any highly technical notes describing various assumptions like this that we could have access to?

How about starting one?

Another variant would be to fill the areas of missing data with some color, or outline it. You cant do that now with contour because youll get every contour line between the missing data value and the adjacent good data value.

3) On bloodsucking support fees:

\$200/year is a pretty low price for service. Any vertical niche company like RSI needs to make customer service self supporting. I would like for RSI to make available things like known bugs, and other tech documents, that cost them little and can save users lots. Also an e-mail address to RSI to report possible bugs. Also a language summary on a single page. Also a "see also" section for each routine in the reference manual. Also hypertext help. Ok Ill stop now.....
