Subject: Re: Removing and Replacing Nan values in IDL
Posted by natha on Thu, 19 Jul 2012 13:54:29 GMT
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I think that the following code will work :

```
mask1=WHERE(FINITE(image1) EQ 0,nn1)
IF nn1 GT 0 THEN BEGIN
  mask2=WHERE(FINITE(image2[mask1]) EQ 1,nn2)
  IF nn2 GT 0 THEN image1[mask1[mask2]]=image2[mask1[mask2]]
ENDIF
```

Bernat

Subject: Re: Removing and Replacing Nan values in IDL
Posted by adhdunn on Thu, 19 Jul 2012 14:15:04 GMT
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On Thursday, July 19, 2012 9:54:29 AM UTC-4, nata wrote:
> I think that the following code will work :
>
> mask1=WHERE(FINITE(image1) EQ 0,nn1)
> IF nn1 GT 0 THEN BEGIN
> mask2=WHERE(FINITE(image2[mask1]) EQ 1,nn2)
> IF nn2 GT 0 THEN image1[mask1[mask2]]=image2[mask1[mask2]]
> ENDIF
>
> Bernat

Hello Bernat,

Thank you for your reply. Right now I have the following lines of code:

```
create an image1-sized matrix of all NaNs (c)
; find where both image1 and image2 have valid values
; replace corresponding indices in c with the larger of image1 or image2
; all other values remain as NaNs

C = REPLICATE( !VALUES.F_NAN, N_ELEMENTS(image1) )

good = WHERE( FINITE(image1) and FINITE(image2), ngood )
IF ( ngood GT 0 ) THEN C[good] = (image1[good] + image2[good])/2

filter[i/2] = c
```

I believe that I need some of this to create my average between the two files. Will the statement you sent fit in here somewhere, or do I need to remove this and replace it completely? Overall I

need to create an average between image1 and image2. If the value in image1 is NaN but not in image2 I want to replace image1 with image2, and vice versa, and then not take an average just leave that value as is. Of course an average of those would just yield the same value so I suppose that does not matter.

Subject: Re: Removing and Replacing Nan values in IDL
Posted by adhdunn on Thu, 19 Jul 2012 14:36:54 GMT
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It might help to also have the other part of the code as well. Everything below is before the section I posted previously:

```
openr, lun, 'F:\PhD\Data\MODIS\LST\h9v4_h10v4_LST_daynight', /get_lun

band = fltarr(2401, 1200)
image = assoc(lun, band)

openw, lun, 'F:\PhD\Data\MODIS\LST\h9v4_h10v4_LST_mnthavgTST_2010', /get_lun
filter = assoc(lun, band)

imageout = image[0]
imagetwo = image[1]


a= image[0]/image[1]

; evaluate division result to make sure it's a valid #
; then examine all indices that represent valid numbers to see if they're GT 1.2
; i.e., find places where image[0] values are 1.2x greater than corresponding
 image[1] values

removefirst = where(a[where(FINITE(a) eq 1)] gt 1.2, count)

; if division result gt 1.2
; replace all values in imageout with values from image[1] that are 1.2x less
   than image[0]

if count GT 0 then imageout[removefirst] = imagetwo[removefirst]

for i = 0,23,2 do begin

   image1 = image[i]*0.02-273.15
   image2 = image[i+1]*0.02-273.15

 filter[i/2] = image1>image2
```

Subject: Re: Removing and Replacing Nan values in IDL
Posted by lecacheux.alain on Thu, 19 Jul 2012 16:35:33 GMT
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Le jeudi 19 juillet 2012 15:47:39 UTC+2, adh...@gmail.com a écrit :
> Hello,
>
> I am working with MODIS Land Surface Temperature and need to clean my data to remove and replace the NaN values. I currently have a little code that I have written to scale the data, convert from Kelvin to Celsius, and average the night and day temp observations, but I am having trouble writing the (probably very simple) lines that will accomplish this last goal of NaN removal.
>
> What I would like to do is to set up some kind of statement where the program looks for any NaN values in 'image1' and checks if the corresponding location in 'image2' also has NaN values.
>
> The next step would be to say if image1 has NaN values, but image2 does not then replace that pixel in image1 with image2. Then you would also do this for image2 replacing with the image1 value. If they both have NaN values you do nothing.
>
> Does this make sense?
>
> If anyone would like to help me I can post my code and give more details.
> Any guidance would definitely be appreciated!!
>
> Thank you!
> Allisyn

You can use the IDL 'finite' function.
I assume that both images have same dimensions.
step1:
IDL> w=where(~finite(image1) and ~finite(image2))
'w' is the vector of indices where both images have NaN values.
step2:
IDL> w=where(~finite(image1) and finite(image2),/NULL)
IDL> image1[w]=image2[w]
'w' is the vector of indices where image1 has NaN while image2 has finite values.
Then same statement, but exchanging image1 and image2.
alain.

Subject: Re: Removing and Replacing Nan values in IDL
Posted by adhdunn on Thu, 19 Jul 2012 18:52:11 GMT
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On Thursday, July 19, 2012 9:47:39 AM UTC-4, adh...@gmail.com wrote:
> Hello,
>

> I am working with MODIS Land Surface Temperature and need to clean my data to remove and replace the NaN values. I currently have a little code that I have written to scale the data, convert from Kelvin to Celsius, and average the night and day temp observations, but I am having trouble writing the (probably very simple) lines that will accomplish this last goal of NaN removal.
>
> What I would like to do is to set up some kind of statement where the program looks for any NaN values in 'image1' and checks if the corresponding location in 'image2' also has NaN values.
>
> The next step would be to say if image1 has NaN values, but image2 does not then replace that pixel in image1 with image2. Then you would also do this for image2 replacing with the image1 value. If they both have NaN values you do nothing.
>
> Does this make sense?
>
> If anyone would like to help me I can post my code and give more details.
> Any guidance would definitely be appreciated!!
>
> Thank you!
> Allisyn

Hi Alain,

Thank you for the suggestion! I am not sure if you saw the reply post from an earlier suggestion, but I am in need of figuring out where to insert these code lines. I currently have it written as follows, and I will need to retain the component that creates the average between image1 and image2 (assuming the pixel is not being replaced due to its NaN value). Any thoughts?

```
openr, lun, 'F:\PhD\Data\MODIS\LST\h9v4_h10v4_LST_daynight', /get_lun

band = fltarr(2401, 1200)
image = assoc(lun, band)

openw, lun, 'F:\PhD\Data\MODIS\LST\h9v4_h10v4_LST_mnthavgTST_2010', /get_lun
filter = assoc(lun, band)

imageout = image[0]
imagetwo = image[1]


a= image[0]/image[1]

; evaluate division result to make sure it's a valid #
; then examine all indices that represent valid numbers to see if they're GT 1.2
; i.e., find places where image[0] values are 1.2x greater than corresponding
 image[1] values

removefirst = where(a[where(FINITE(a) eq 1)] gt 1.2, count)
```

```
; if division result gt 1.2
; replace all values in imageout with values from image[1] that are 1.2x less
   than image[0]

if count GT 0 then imageout[removefirst] = imagetwo[removefirst]

for i = 0,23,2 do begin

   image1 = image[i]*0.02-273.15
   image2 = image[i+1]*0.02-273.15

       filter[i/2] = image1>image2

create an image1-sized matrix of all NaNs (c)
; find where both image1 and image2 have valid values
; replace corresponding indices in c with the larger of image1 or image2
; all other values remain as NaNs

C = REPLICATE( !VALUES.F_NAN, N_ELEMENTS(image1) )

good = WHERE( FINITE(image1) and FINITE(image2), ngood )
IF ( ngood GT 0 ) THEN C[good] = (image1[good] + image2[good])/2

filter[i/2] = c

end for
end
```