
Subject: Re: subset a 2d array

Posted by [xiao zhang](#) on Thu, 14 Aug 2008 03:22:35 GMT

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On Aug 13, 10:19 pm, David Fanning <n...@dfanning.com> wrote:

> xiao writes:

>> For example, i hava an array like this:

>

>> 13, 14, 15, 16, 17

>> 23, 24, 25,26, 27

>> 2, 4 , 5, 66 ,7

>> 13, 14, 15, 16, 17

>> 13, 14, 15, 16, 17

>

>> i know the center value is 5 .Then i want to subset the array to 3*3

>> and 5 is still the center. Just subset like this :

>

>> 24, 25,26

>> 4 , 5, 66

>> 14, 15, 16,

>

>> Any one has good ideas how can i do that?

>

> How about something like this:

>

> subarray = array[1:3, 1:3]

>

> Cheers,

>

> David

>

> --

> David Fanning, Ph.D.

> Fanning Software Consulting, Inc.

> Coyote's Guide to IDL Programming:<http://www.dfanning.com/>

> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

hmmm... The problem is I have a array like 240*500. And all the values are different. And I do not know the row and column. I only know the center value should be 2.5 . Then ,how can I do that? :)

Thank you~

Subject: Re: subset a 2d array

Posted by [David Fanning](#) on Thu, 14 Aug 2008 03:53:11 GMT

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xiao writes:

> hmmm... The problem is I have a array like 240*500. And all the
> values are different. And I do not know the row and column. I only
> know the center value should be 2.5 . Then ,how can I do that? :)

```
index = Where(array EQ 2.5, count)
xy = array_indices(array, index[0])
subarray = array[xy[0]-1:xy[0]+1, xy[1]-1:xy[1]+1]
```

Cheers,

David

--

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Subject: Re: subset a 2d array

Posted by [xiao zhang](#) on Thu, 14 Aug 2008 14:54:04 GMT

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On Aug 13, 10:53 pm, David Fanning <n...@dfanning.com> wrote:

> xiao writes:

>> hmmm... The problem is I have a array like 240*500. And all the
>> values are different. And I do not know the row and column. I only
>> know the center value should be 2.5 . Then ,how can I do that? :)

>

```
> index = Where(array EQ 2.5, count)
> xy = array_indices(array, index[0])
> subarray = array[xy[0]-1:xy[0]+1, xy[1]-1:xy[1]+1]
```

>

> Cheers,

>

> David

> --

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hoho, Thank you very much~ David~

Subject: Re: subset a 2d array

Posted by [xiao zhang](#) on Thu, 14 Aug 2008 16:24:26 GMT

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On Aug 13, 10:53 pm, David Fanning <n...@dfanning.com> wrote:

```
> xiao writes:
>> hmmm... The problem is I have a array like 240*500. And all the
>> values are different. And I do not know the row and column. I only
>> know the center value should be 2.5 . Then ,how can I do that? :)
>
> index = Where(array EQ 2.5, count)
> xy = array_indices(array, index[0])
> subarray = array[xy[0]-1:xy[0]+1, xy[1]-1:xy[1]+1]
>
> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")
```

Sorry David, I still got problems here. I printed out all the values in the array and i found the center value which is -28.0011 but when I tried to do this :

```
index=where(lat eq -28.0011,count)
xy = array_indices(lat, index[0])
subarray = lat[xy[0]-400:xy[0]+400, xy[1]-400:xy[1]+400]
```

It cannot find the index number...Why is that? Thank you?
PS :THIS ARRAY IS A FLOAT ARRAY.

Subject: Re: subset a 2d array
Posted by [David Fanning](#) on Thu, 14 Aug 2008 16:34:23 GMT
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xiao writes:

```
> Sorry David, I still got problems here. I printed out all the values
> in the array and i found the center value which is -28.0011 but when I
> tried to do this :
>
> index=where(lat eq -28.0011,count)
> xy = array_indices(lat, index[0])
> subarray = lat[xy[0]-400:xy[0]+400, xy[1]-400:xy[1]+400]
>
>
> It cannot find the index number...Why is that? Thank you?
```

> PS :THIS ARRAY IS A FLOAT ARRAY.

Yeah, I thought I would let you solve one problem at a time. :-)

The "problem" is that computers cannot represent numbers "exactly". At least most numbers they can't. (They do a reasonable job with integers. :-)

http://www.dfanning.com/math_tips/sky_is_falling.html
http://www.dfanning.com/math_tips/razoredge.html

Typically, if we are looking for floating values, we have to add/subtract a small "delta" to the number to be able to find it. How big should the delta be? Big enough to allow you to find the number you are looking, but not too big to add ambiguity to your search. You could try something like this, for example"

```
delta = 1e-3  
index = Where(array GE (2.5-delta) AND array LE (2.5+delta), count)
```

Or, if you are just looking for the center of the array, you could always do this:

```
s = Size(array, /Dimensions)  
xcenter = s[0]/2  
ycenter = s[1]/2  
targetValue = array[xcenter, ycenter]
```

Cheers,

David

--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: subset a 2d array
Posted by [xiao zhang](#) on Thu, 14 Aug 2008 16:46:57 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Aug 14, 11:34 am, David Fanning <n...@dfanning.com> wrote:

> xiao writes:

>> Sorry David, I still got problems here. I printed out all the values

```

>> in the array and i found the center value which is -28.0011 but when I
>> tried to do this :
>
>> index=where(lat eq -28.0011,count)
>> xy = array_indices(lat, index[0])
>> subarray = lat[xy[0]-400:xy[0]+400, xy[1]-400:xy[1]+400]
>
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>> PS :THIS ARRAY IS A FLOAT ARRAY.
>
> Yeah, I thought I would let you solve one problem
> at a time. :-)
>
> The "problem" is that computers cannot represent numbers
> "exactly". At least most numbers they can't. (They do
> a reasonable job with integers. :-)
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> http://www.dfanning.com/math\_tips/sky\_is\_falling.html
> http://www.dfanning.com/math\_tips/razoredge.html
>
> Typically, if we are looking for floating values, we
> have to add/subtract a small "delta" to the number
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> looking, but not too big to add ambiguity to your
> search. You could try something like this, for example"
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>
> Or, if you are just looking for the center of the array, you
> could always do this:
>
> s = Size(array, /Dimensions)
> xcenter = s[0]/2
> ycenter = s[1]/2
> targetValue = array[xcenter, ycenter]
>
> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming (www.dfanning.com)
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

```

haha, it works , thank you David~ :)
