
Subject: Re: Assigning the values of a matrix to a larger matrix
Posted by [Fabrice Lambert](#) on Wed, 07 May 2014 16:35:45 GMT
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Hello,

Thank you very much for the help with rebin. That works great to work on the last dimension. Unfortunately, rebin doesn't support changes to other dimensions. Example:

```
for i=0,127 do begin
  for j=0,63 do begin
    for t=0,11 do begin
      for b=0,5 do begin
        for p=0,1 do begin
          AtmConc[i,j,*,t,b,p]=SurfConc[i,j,t,b,p]*AtmFactor[i,j,*,t,b ,p]
        endfor
      endfor
    endfor
  endfor
endfor
```

Is there a way to avoid the for-loops in that case?

Thanks,
Fabrice

On Friday, May 2, 2014 2:16:45 PM UTC-4, Heinz Stege wrote:

> On Wed, 30 Apr 2014 16:05:11 -0700 (PDT),

>

> wrote:

>

>

>

>> Hello Heinz,

>

>>

>

>> That works, thanks a lot!

>

>>

>

>> I find it very counter-intuitive, though: In my example to fill in the values we want in the 3rd dimension of the base vector, we have to create a 4th dimension where every index contains a copy of the original 3d-input vector.

>

>>

>

>> Is there an easy way to understand that logic?

```
>
>>
>
>> Thanks,
>
>> Fabrice
>
>>
>
>> On Wednesday, April 30, 2014 5:21:35 PM UTC-4, Heinz Stege wrote:
>
>>> Hello Fabrice.
>
>>>
>
>>>
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>>>
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>>>
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>>>
>
>>> Is there a way to write the following code in IDL/GDL without a for loop?
>
>>>
>
>>>>
>
>>>
>
>>>> for i=0,90 do begin
>
>>>
>
>>>>   Base[*,*,i]=Input[*,*,0]
>
>>>
>
>>>> endfor
>
>>>
>
>>>
>
>>>
```

```

>
>>> Yes, you can write:
>
>>>
>
>>>
>
>>>
>
>>> n=size(input,/dimensions)
>
>>>
>
>>> base[0,0,0]=rebin(input,[n,91],/sample)
>
>>>
>
>>>
>
>>> If the base array does not have to be bigger than the 91x input
>
>>>
>
>>> array, you don't need to create it explicitly and can more simply
>
>>>
>
>>> write:
>
>>>
>
>>>
>
>>>
>
>>> n=size(input,/dimensions)
>
>>>
>
>>> base=rebin(input,[n,91],/sample)
>
>>>
>
>>>
>
>>>

```

>
>>> Cheers, Heinz
>
>
>
>
>
>
> Hello Fabrice,
>
>
>
>
> I believe, something went absolutely wrong here. Are you really sure,
>
> that you get a correct result with my solution?
>
>
>
> You say, that `rebin(input,[n,91],/sample)` has 4 dimensions. This
>
> means, that input itself has 3 dimensions (and the size of the 3rd
>
> dimension is greater or equal 2). It was my failure, not to think of
>
> this possibility. Something made me thinking, that it was an "extra
>
> dimension" you addressed with the zero in `Input[:,*,0]`. Sorry for
>
> this.
>
>
>
>
> I wonder, why IDL didn't throw an error message. Does your base array
>
> have more than 3 dimensions, which you don't want to touch with this
>
> part of code?
>
>
>
> Anyway, you want to write 3 dimensions into the base array. And as I
>
> understand now, your input array has 3 dimensions too, but you want to
>
> repeatedly use the first element of the third dimension. Here is a
>
> detailed example, how to do this without a loop:
>
>

```

>
> input=indgen(5,4,2)
>
> base=intarr(5,4,3)
>
> base[0,0,0]=rebin(input[*,*],5,4,3,/sample)
>
>
>
> A print displays the following result:
>
> IDL> print,base
>
>   0   1   2   3   4
>
>   5   6   7   8   9
>
>  10  11  12  13  14
>
>  15  16  17  18  19
>
>
>   0   1   2   3   4
>
>   5   6   7   8   9
>
>  10  11  12  13  14
>
>  15  16  17  18  19
>
>
>   0   1   2   3   4
>
>   5   6   7   8   9
>
>  10  11  12  13  14
>
>  15  16  17  18  19
>
>
>
> Another note: It is not mandatory, that for big arrays, this solution
>
> is faster than a loop. If your routine is time-consuming, you should
>
> test it.

```

>
>
>
> I hope, this makes the things more clear. And sorry again for my
>
> mistake.
>
>
>
> Cheers, Heinz
