Subject: Re: changing matrix size using interpolation
Posted by David Fanning on Mon, 17 Jan 2011 14:57:08 GMT

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geoff writes:

> I think this might not be too hard but it would be great to have a
> pointer to the routines...
>
> I have a x by y matrix (of elevations for a topographic map)
>
> I want to turn it into a new matrix which is n by m where n and m
> could be greater or less than x or y and not necessarily an integer
> multiple or fraction.
>
> I have tried this...
>
> x=4.0
> y=4.0
>
> a=findgen(x,y)
>
> m=7.0
> n=7.0
>
> b=interpolate(a,findgen(m)*(x-1)/(m-1),findgen(n)*(y-1)/(n-1),/
> GRID,missing=-1)
>
> print,a
> print,b
>
> and it seems to work, but this must have been done many times before
> and just wanted to check I'm right?

I think most people use the CONGRID command, with the INTERP
keyword set.

   b = Congrid(a, 7, 7, /INTERP)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.

Subject: Re: changing matrix size using interpolation
Posted by David Fanning on Mon, 17 Jan 2011 14:59:39 GMT
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David Fanning writes:

> I think most people use the CONGRID command, with the INTERP
> keyword set.
>
>   b = Congrid(a, 7, 7, /INTERP)

And now that I think about it, I think the CENTER keyword
should probably be set, too, especially if you are working
with small arrays.

    b = Congrid(a, 7, 7, /INTERP, /CENTER)

Cheers,

David

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

Subject: Re: changing matrix size using interpolation
Posted by oxfordenergyservices on Mon, 17 Jan 2011 15:52:07 GMT
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On Jan 17, 2:59 pm, David Fanning <n...@dfanning.com> wrote:
> David Fanning writes:
>> I think most people use the CONGRID command, with the INTERP
>> keyword set.
>
>>   b = Congrid(a, 7, 7, /INTERP)
>
> And now that I think about it, I think the CENTER keyword
> should probably be set, too, especially if you are working
> with small arrays.

```
>
>    b = Congrid(a, 7, 7, /INTERP, /CENTER)
>
> Cheers,
>
> David
```

Thanks David

I tried both ways, they look identical (in tv,bytscl and shade_surf)
but they do different things outside the topographic region (ie sea
level) when /cubic is set. They also seem to have 5% difference on
the land, but could be due to subtly different algorithms