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Subject: Re: 3D congrid without interpolation  
Posted by [JD Smith](#) on Sat, 14 Apr 2007 01:00:48 GMT  
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On Fri, 13 Apr 2007 17:33:53 -0700, David Fanning wrote:

> JD Smith writes:  
>  
>> How is "nearest neighbor sampling" not interpolation? Does it  
>> explicitly avoid knowledge of how the new array cell is positioned  
>> w.r.t. the old one, and simply grab averages of nearby neighbors? Why  
>> would this ever be preferable to a linear interpolation?  
>  
> I don't know. I guess it is preferable because it  
> doesn't add new numbers to your data. (I never really  
> thought about or cared how it was done, but I suppose  
> someone ought to.)

Aha, well I guess it really does just pick the nearest neighboring cell,  
so it is not interpolation (I presumed it was averaging over neighbors  
without weighting).

```
IDL> a=findgen(5,5)
IDL> print,a
  0.00000   1.00000   2.00000   3.00000   4.00000
  5.00000   6.00000   7.00000   8.00000   9.00000
 10.0000   11.0000   12.0000   13.0000   14.0000
 15.0000   16.0000   17.0000   18.0000   19.0000
 20.0000   21.0000   22.0000   23.0000   24.0000
IDL> print,congrid(a,4,4)
  0.00000   1.00000   2.00000   3.00000
  5.00000   6.00000   7.00000   8.00000
 10.0000   11.0000   12.0000   13.0000
 15.0000   16.0000   17.0000   18.0000
IDL> print,congrid(a,4,4,/INTERP)
  0.00000   1.25000   2.50000   3.75000
  6.25000   7.50000   8.75000   10.0000
 12.5000   13.7500   15.0000   16.2500
 18.7500   20.0000   21.2500   22.5000
```

JD

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