Subject: Re: What is like CONGRID, but averages on reduction?
Posted by Liam Gumley on Wed, 11 Oct 1995 07:00:00 GMT
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grunes@news.nrl.navy.mil (Mitchell R Grunes) wrote:
> Subject: What is like CONGRID, but averages on reduction?
> I need to reduce the size of an array by an arbitrary (non-integral)
> factor, using an averaging algorithm. Is there such a routine
> in IDL and/or PV-WAVE?
> When I display an image that is larger than the window, I use:
>   A=REBIN(A,XSZ,YSZ)
> or
>   A=CONGRID(A,XSZ,YSZ)
> The problem with REBIN is that XSZ and YSZ must be integral factors
> of the size of A. This means that I often can not take advantage
> of the whole screen. But it is able to average things down (as
> long as I don't set /SAMPLE), so bright and dark points don't get
> lost.

If it's image display you are most concerned with, then try the TVIM procedure from the excellent ESRG user library package. You can get it from ftp.crseo.ucsb.edu in pub/idl/esrg_idl_3.2.tar.Z

In your example, the array could be displayed in three ways:

```
A=INTARR(9,9)
A(3,3)=1
; This will display a square at (3,3)
TVIM,A
; This will display a smoothed peak at (3,3), from bilinear interpolation
TVIM,A,INTERP=1
; This will display a smoothed peak at (3,3) which most accurately represents
; the cell center value of the pixels, but introduces an extrapolation on the
; outer edges, which can have a noticeable effect on small image arrays.
TVIM,A,INTERP=2
```

TVIM is the best way I have found to display images of arbitrary size scaled to fit the current graphics window. It also offers very nice color scale and labelling options (it displays the image in a plot window), and offers very easy interfacing to Postscript output via the ESRG library TOGGLE command.

Full credit goes to Paul Ricchiazzi of the Earth Space Research Group at UCSB for creating one of the most useful IDL procedures I've found. I hardly ever use TV or TVSCL any more - TVIM is much more useful.

Cheers,
Liam.