Subject: Re: creating a 2D mask for image filtering
Posted by David Fanning on Wed, 17 Aug 2011 13:11:06 GMT
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Dave Higgins writes:

> I need to create a 2D mask to filter data in the frequency domain
> (apodization). I would like to leave 0.8 of the centre-to-edge of the
> data untouched (i.e. a circle of untouched data), and then a Hanning-
> type shape to smooth down to zero at the edges. (Think of an upside-
> down frying pan, kinda.) I can apply a Hanning filter with
>
> apod_fn = HANNING(kx_res, ky_res, alpha=0.5)
>
> but of course the centre area which I would like to have untouched
> doesn't exist, and the filter is too aggressive. I'd go without the
> Hanning shape requirement if I could get more-or-less the right shape.
> I see also DIGITAL_FILTER, but can't seem to widen the filter with my
> changes to it's arguments.
>
> Thanks for any pointers.

I would construct your filter something like this:

```
s = Size(image, /Dimensions)
hf = Hanning(s[0], s[1], ALPHA=0.5)
thisDevice = !D.Name
Set_Plot, 'Z'
Device, SET_RESOLUTION=s, SET_PIXEL_DEPTH=8, DECOMPOSED=0
Erase, COLOR=0
maxRadius = Max(s)/2
TVCircle, maxRadius*0.8, s[0]/2, s[1]/2, COLOR=1, /FILL
circleMask = TVRD()
Set_Plot, thisDevice
indices = Where(circleMask EQ 1)
hf[indices] = 1
cgSurface, hf
END
```

Cheers,

David
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Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")