
Subject: Re: Fractional Pixels Origin?

Posted by [Mark Hadfield](#) on Tue, 21 Feb 2006 21:44:25 GMT

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JD Smith wrote:

> [snip]

>

> I don't see your argument. Fractional pixels are useful only when
> calculating things which relate pixel coordinates to some other
> coordinate (like celestial coordinates on the sky, etc), or when
> computing other derived fractional pixel positions (e.g. clip two
> polygons). Obviously, the computer has no understanding of a
> fractional pixel, but only the memory indexed offset [0,0]. But the
> latter does not have to drive the former. In fact I'd say it's rather
> strange to let the layout in memory dictate a physical coordinate
> system. You don't need to make this distinction.

Hang on. I'm not letting layout in memory dictate a physical coordinate system. I'm just adopting a convention for "image plots" that is the same as for other plot types.

I have a data array, mydata, dimensioned [m,n]

When I type

 contour, mydata

the contour routine implicitly locates the data points at $x = [0, \dots, m-1]$, $y = [0, \dots, n-1]$. Ditto when I type

 surface, mydata

Similarly for plots of 1D arrays.

When I plot this data via a false-colour image using my own image-plotting routine

 mgh_image_plot, mydata

then I adopt the same convention. If the image is "blocky" (eg an IDLgrImage with INTERPOLATE=0) then the cell centres represent the data points; the image has to fill the space $-0.5 \leq x \leq m-0.5$ (similarly for y) to get them in the right location. If the image is "smooth" (eg an IDLgrImage with INTERPOLATE=1) then the outer row & column of data points lie on the edge of the image and it fills the space $0 \leq x \leq m-1$, etc.

That's the convention I prefer, for reasons which seem good to me. If

that's not the subject under discussion in this thread (which was never entirely clear to me) then please disregard it.

--

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