
Subject: Re: Fractional SHIFT

Posted by [Ralf Flicker](#) on Mon, 03 Dec 2001 21:10:16 GMT

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trouble wrote:

```
>
> Hi,
>
> Does anyone have a method for doing non-integer shifts ? Interpolate
> doesn't wrap in the way SHIFT does and my hack (based on MOD) is a bit
> dodgy.
>
> To shift orig by 1.5 pixels:
>
> orig = FINDGEN(10)
>
> index = FINDGEN(10)
> delta = 1.5
> index2 = (index+delta) MOD 10
>
> new = INTERPOLATE(orig,index2,/GRID)
>
> PRINT,new
>
>   1.50000   2.50000   3.50000   4.50000   5.50000
> 6.50000
>   7.50000   8.50000   9.00000   0.500000
>
> The 2nd last element of new is wrong (should be 9.5).
>
> Does anyone know a robust way ?
```

If you had periodic arrays you could FFT, multiply by a complex exponential, and FFT back. In your example above, I guess you could make orig periodic by mirroring it across the origin. No idea if this will work for you, but I sometimes use the FFT + complex exponential rather than interpolating for shifting arrays non-integer steps.

cheers
ralf

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