Subject: Re: Filled area curve
Posted by Yngvar Larsen on Mon, 26 Aug 2013 12:42:36 GMT
View Forum Message <> Reply to Message

On Monday, 26 August 2013 14:15:40 UTC+2, Rob Dimeo wrote:
> Hi,
>
> A quick search on this NG came up fruitless but I'm hoping that someone has done this type of plot before.
>
> David has a very nice example of a curve with part of the area under it filled with a solid color: http://www.idlcoyote.com/gallery/filled_area_plot.png
>
> I would like to extend this so that the area is actually a sequence of colors, the value of which is tied to the independent variable. I intend to plot the magnitude of a complex function, |z(x)|, (as a function of some independent variable, x) as the "curve" and encode the phase angle (again, as a function of x) as a filled (generally multiple-) color area below the curve.
>
>
>
> So the main difference from the plot shown in the link above would be that the solid color that fills the area under the curve would instead be a gradient of colors that transition from one x-value to another, depending on the value of x and the color table used.

Something like this could be a starting point for you:

```
x = dindgen(360)/359
phase = x^2*4*!dpi
mag = abs(sin(2*!dpi*x))
z = mag*exp(complex(0,1)*phase)

col=bytscl(atan(z, /phase))

device, get_decomposed=decomp_flag

device, decomposed=1
plot, x, mag, /nodata
loadct, 33
device, decomposed=0
for ii=0, n_elements(x)-2 do polyfill, x[[ii, ii+1, ii+1, ii]], [0,0,mag[ii+1], mag[ii]], color=col[ii]
device, decomposed=1
oplot, x, mag, thick=2

device, decomposed=decomp_flag
```

--
Yngvar

Subject: Re: Filled area curve
Posted by Rob.Dimeo on Mon, 26 Aug 2013 12:54:46 GMT
View Forum Message <> Reply to Message

Many thanks. That's nice, simple, and does the trick.
-Rob

On Monday, August 26, 2013 8:42:36 AM UTC-4, Yngvar Larsen wrote:

> Something like this could be a starting point for you:
>
>
>
> x = dindgen(360)/359
>
> phase = x^2*4*!dpi
>
> mag = abs(sin(2*!dpi*x))
>
> z = mag*exp(complex(0,1)*phase)
>
>
>
> col=bytscl(atan(z, /phase))
>
>
>
> device, get_decomposed=decomp_flag
>
>
>
> device, decomposed=1
>
> plot, x, mag, /nodata
>
> loadct, 33
>
> device, decomposed=0
>
> for ii=0, n_elements(x)-2 do polyfill, x[[ii, ii+1, ii+1, ii]], [0,0,mag[ii+1], mag[ii]], color=col[ii]
>
> device, decomposed=1
>
> oplot, x, mag, thick=2
>
>
>
> device, decomposed=decomp_flag
>

>
>
> --
>
> Yngvar

Subject: Re: Filled area curve
Posted by Craig Markwardt on Sat, 14 Sep 2013 04:55:19 GMT
View Forum Message <> Reply to Message

On Monday, August 26, 2013 8:15:40 AM UTC-4, Rob Dimeo wrote:
> Hi,
>
>
>
> A quick search on this NG came up fruitless but I'm hoping that someone has done this type of plot before.
>
>
>
> David has a very nice example of a curve with part of the area under it filled with a solid color: http://www.idlcoyote.com/gallery/filled_area_plot.png
>
>
>
> I would like to extend this so that the area is actually a sequence of colors, the value of which is tied to the independent variable. I intend to plot the magnitude of a complex function, |z(x)|, (as a function of some independent variable, x) as the "curve" and encode the phase angle (again, as a function of x) as a filled (generally multiple-) color area below the curve.
>
>
>
> So the main difference from the plot shown in the link above would be that the solid color that fills the area under the curve would instead be a gradient of colors that transition from one x-value to another, depending on the value of x and the color table used.

I realize that I'm a couple weeks late to the game.

For future reference, consider PLOTCOLORFILL,
  http://www.physics.wisc.edu/~craigm/idl/graphics.html#PLOTCO LORFILL
which appears to do exactly what you want!

Craig
