Subject: Re: PLOT question
Posted by Paul van Delst on Wed, 20 Dec 2000 18:51:24 GMT
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Stuart Colley wrote:
>
> I have some data that is periodic, y=f(t) and the data is plotted as
> plot, t, y The problem is I'd like t to plot phase angle rather than
> time, the problem being the phase angle is between 0 and 1 and repeats.
> Attempting to plot the data you just get a plot between 0 and 1, what I'd
> like to be able to plot is each cycle of the data with it's phase angle.
>
> Any ideas on how to get the plot axes right?

If I understand you correctly, you want to remove the discontinuity in your phase angle - like in a TAN plot that goes from +/- pi or +/- pi/2 ?

If so, one way is to calculate the phase angle derivatives. If there is a change in sign near a known boundary (0 or 1), you can add or subtract (based on the sign of the derivative) the required
amount to make the phase angle curve continuous.

I did this many years ago in fortan to view the phase of radiometric signals from an interferometer. They bounced between +/- pi and doing the above made the plot relatively (insert some hand-waving
here) continuous. If you have a noisy signal, then it can get a bit more difficult as the noise can confuse matters when the signal is close to a boundary, i.e. you get a lot of flipping back and forth, but then the result is a continuous curve with dropouts which, in some respects, may also be a useful plot.

If this is not what you mean, then delete this message.

paulv.

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