
Subject: Re: PLOT question

Posted by [Craig Markwardt](#) on Thu, 21 Dec 2000 00:01:42 GMT

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Stuart Colley <src@star.ucl.ac.uk> writes:

- > 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?

It's not clear to me that everybody else is going waaaaayyy overboard here. Stuart hasn't responded so that may be a good or a bad sign.

Are you just asking how to convert linear time into phase? Perhaps this is best accomplished with the MOD operator. If your signal has period P, and the starting epoch is T0, then this may do the trick.

```
phase = (t-t0)/p MOD 1
phase = (phase+1) MOD 1
plot, phase, y
```

The "MOD 1" takes the remainder when divided by 1, or simply the fractional value. The "extra" MOD step there is because MOD doesn't handle negative numbers very well. It maps the segment from -1 to 0 back onto 0 to 1. Another way to do it in one step is

```
phase = (t-t0)/p
phase = phase - floor(phase)
```

Craig

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Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
