In article
<9cb6bd9c-a2b4-487a-b039-a9e636ba55af@c26g2000vbq.googlegroups.com>,
 Eric Hudson <ehudson@mit.edu> wrote:

> Hi,
>
> I was wondering if anyone has implemented a non-uniform FFT algorithm
> in IDL. We have non-regularly spaced real space data that we need to
> Fourier transform, and it is painfully slow to do the discrete
> transform. I have found several c algorithms online (e.g.
> http://www-user.tu-chemnitz.de/~potts/nfft/download.php) but before
> launching into either converting them or figuring out how to run C
> code from within IDL thought maybe someone else had already gone to
> the trouble.
>
> Thanks,
> Eric

The approach could depend on just how non-uniform your data are.

Do you need the whole spectrum, or do you know in advance
which wavenumbers are of interest?

You can do the DFT using least squares (regression), but that will
be slow if you need the full spectrum.

If you only need low wavenumbers, you could interpolate to
a regular grid and then use least squares or the FFT.

Ken Bowman