Subject: Re: Dynamic Spectrum
Posted by R.G. Stockwell on Mon, 02 Jun 2008 16:16:36 GMT
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<duxiyu@gmail.com> wrote in message
news:b89c97e8-2b45-4507-a70b-0f71cdb91a8e@p25g2000pri.google groups.com...
> Dear all,
>
> I have a set of data and their measued time.
> I want to get the similary Dynamic Spectrum which is shown in
> http://urap.gsfc.nasa.gov/www/reiner/spectra.html.
> Is there any IDL procedure to get the Dynamic Spectrum?
>
> Best regards,
> Du Jian

Hi Du Jian,
here is a link to a page that has IDL code to do a similar thing.

http://www.cora.nwra.com/stransform/

The file you would need is s_trans.pro, here is the direct link:
http://www.cora.nwra.com/~stockwel/rgspages/S-Transform/s_tr ans.pro

Here is a simple example:

```
ex_len = 512
 ex_time = findgen(ex_len)
 ex_freq = 5;ex_len/16
 ex_ts =  cos(2*!Pi*ex_freq*ex_time/ex_len)
 ex_ts =  cos(2*!Pi*(ex_len/5+2*ex_ts)*ex_time/ex_len)
 ; crossed chirp example commented out
  ;ex_ts =  cos(2*!Pi*ex_freq*ex_time*(1+2*ex_time/ex_len)/ex_len)
  ;ex_ts = ex_ts + reverse(ex_ts)
 !P.multi=[0,1,2]
 plot,ex_ts,xtitle='Time (units)',title='Time Series [h(t) = cos(cos(wt))]'
 s = s_trans(ex_ts,/samp, /AMPLITUDE,verbose=verbose)  ; returns structure,
amps only returned
 nlevels = 14
 levels = findgen(nlevels)/(nlevels-1)*1.5

  contour,s.st,ex_time,s.freq,levels=levels,/fill,xtitle='Time (units)', $
  ytitle='Frequency (1/unit)',title='Amplitude of S-Transform'
```

end

Cheers,
bob