Subject: Re: Complications with variance using FFTs
Posted by olde_english33 on Thu, 22 Jul 2004 17:06:12 GMT
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Craig Markwardt <craigmnet@REMOVEcow.physics.wisc.edu> wrote in message news:<onbri943hd.fsf@cow.physics.wisc.edu>...
> olde_english33@hotmail.com (Eric) writes:
>>
>> From what I can gather from my program, the positive frequencies are
>> those from 1:15. Then the frequencies from 16:30 are the complex
>> conjugates of the frequencies from 15:1. Therefore, I thinkt that IDL
>> is already accounting for the complex conjugate in the negative
>> frequencies, unless I am missing something.
>
> I think you are missing that when you multiply the positive frequency
> components by a complex phase, then you must also multiply the
> negative frequency components by the complex conjugate, i.e. the
> negative of that phase. To preserve a real signal that is.
>
> That's another probing question, is the final result of your technique
> real or complex?
>
> Craig

Using my technique of making the phase symmetric produces results that are real, or very nearly real considering machine eps. I also tried it using the technique you suggested above, but was again unsuccessful. For example, one of the returned numbers was (30.3417, -3.79635e-15). So I do not think that is the problem, but still have no idea what the problem is. Do you have any more suggestions on things to check? My colleague believes that inserting a random phase is throwing off the ability to INVERSE FFT the data. Do you know if this could be a possibility?

Eric