Subject: Re: How to calculate the abscissa values for the given vertical values
Posted by duxiyu@gmail.com on Mon, 05 Oct 2009 15:34:39 GMT
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Y is a time series and X is the sampling time.
Both X and Y are discrete.
I don't know the analytical form of the relation bewteen X and Y.

To get the vertical value NY for a given time NX, I can use 'NY =
interpol(Y, X NX)'.
Similarly, I want to get the correspondent time CX for a fixed
vertical value CY.
But the values of correspondent time are not unique. CX should be not
a scalar but an array.
So I cannot use 'CX = interpol(X, Y, CY)' to get these values.

On Oct 5, 4:55 pm, Paolo <pgri...@gmail.com> wrote:
> On Oct 5, 9:43 am, "dux...@gmail.com" <dux...@gmail.com> wrote:
>
>> Maybe my statement is not clear.
>
>> There is a function Y=F(X), and I want to calculate the correspondent
>> abscissa values X for Y=0.
>> It means that there are serval intersection points between the line Y=F
>> (X) and the horizonal line Y=0,
>> and I want to get the correspondent abscissa values of these points.
>
> You should realize that what you *want* and what you can *achieve*
> are two different things. This is a hard problem for general F...
> I believe you should read chapter 9 (on root finding) of the
> numerical recipes book.
>
> But - this problem becomes more easy if you do know something about
> the properties of your function - for instance if you can bracket
> your solutions - so maybe the question is, what do you know about F?
>
> Ciao,
> Paolo
>
>
>
>> On Oct 5, 3:10 pm, Wox <s...@nomail.com> wrote:
>
>>> On Mon, 5 Oct 2009 01:56:20 -0700 (PDT), "dux...@gmail.com"
>
>>> <dux...@gmail.com> wrote:

>>>> Hi, all.
>>>> I want to calculate the abscissa values for the given vertical values.
>
>>>> For example,
>>>>   x = findgen(1000)/1000*4*pi
>>>>   y = cos(x)
>>>> I want to get the abscissa values for y=0.
>>>> For this example, the results shoule be [!pi/2, 3*!pi/2, 5*!pi/2, 7*!
>>>> pi/2].
>>>> But how can I get it by IDL codes?
>
>>>> Best wishes,
>>>> jdu
>
>>> Just for this function:
>>> print,(indgen(ceil(max(x)/!pi))+1)*!pi/2
>
>>> What do you need exactly? You can always find the answer analytically
>>> no?
>
>