Subject: Re: absolute maxima/minima to break an array in 2?
Posted by William Daffer on Fri, 09 Jun 2000 07:00:00 GMT
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Um... Perhaps I'm missing something. Why can't you just use 'min/max' a la...

```
m=max(y1,maxi)
m=min(y2,mini)

 ; decide whether to break at min/max point
 ; set ii=mini|maxi (i.e whichever you decide)

y1l=y1[0:ii] & y1r=y1[ii+1:*]
y2l=y2[0:ii] & y2r=y2[ii+1:*]

  ; with suitable checks for boundary conditions, of course.
```

Perhaps if you told us how you decide between splitting on the min or the max. I guess I don't understand the problem yet.

William

"tb" <tbowers@nrlssc.navy.mil> writes:

> Ok, I give up. So I'm seeking professional help.
> I have data like:
>
> x = [0.0, 0.1, 0.2, 0.4, 0.5, 0.8, 0.9, 1.0]
> y1 = [1.0, 2.5, 2.0, 6.0, 5.5, 2.0, 0.5, 2.5] ;concave dn data
> y2 = [5.0, 3.5, 4.0, 0.0, 0.5, 4.0, 5.5, 3.5] ;concave up data
>
> What I want is to be able to "break" data such as y1 or y2 data
> into 2 sets, array lefty to the left of the absolute maxima/minima
> (greatest magnitude throughout the "function", not just local min/max)
> and array righty to the right of the absolute min/max.
>
> In both y1 and y2, the break should happen at x=0.4 (even though
> there's other 1st deriv. sign changes at x = 0.1, 0.2, and 0.9).
> The problem is that in y1, the break should occur at a maximum
> point (y=6), in y2 it should be at a minimum point (y=0). So
> whether I break at the max or min is dependant on the shape of the
> data. Sometimes it should return all left and right of the max point,
> sometimes the min point.
>
> I'm not exacly sure how to proceed. Do you think that the best
> action would be just to use the deriv(x,y) function to get the 1st
> derivative numerically (so I can find where it's equal to 0), or

> should I try to fit a polynomial, then differentiate that function
> to get the 1st derivative? I guess I'm thinking along the lines of
> finding where dy/dx=0, then try to decide if that point is an
> absolute min/max. Then somehow deciding which I should break at,
> min pt. or max pt.
>
> Any suggestions? To get a visual, I've included a couple of
> command lines below.
>
> ;:::
> tek_color
> x = [0.0, 0.1, 0.2, 0.4, 0.5, 0.8, 0.9, 1.0]
> y1 = [1.0, 2.5, 2.0, 6.0, 5.5, 2.0, 0.5, 2.5] ;concave dn data
> y2 = [5.0, 3.5, 4.0, 0.0, 0.5, 4.0, 5.5, 3.5] ;concave up data
> plot, x,y1
> oplot, x,y2, color=2
> ;:::
>
> As you can see, it's easy to break both arrays into lefty and righty
> visually, but to do it robustly in code, hmmmm....
>
> Thanks in advance.
> tb
>
>
>
>

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Bill Gates is just a monocle and a Persian Cat away from being one
of the bad guys in a James Bond movie. -- D Miller

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